Fraction Vocabulary

Fraction: one or more equal parts of a whole

Numerator: the number of equal parts you are interested in out of the whole

Denominator: the total number of equal parts in the whole

Unit fraction: a proper fraction whose numerator is one

Proper fraction: a fraction whose numerator is less than its denominator

Improper fraction: a fraction whose numerator is greater than or equal to its denominator

Mixed Number: an expression that contains a whole number and a fraction

Equivalent fractions: fractions that have the same value. Equivalent fractions name the same or equal part of the whole.

SIMPLIFYING FRACTIONS

Step 1: Check to see if the numerator is a factor of the denominator. If so, divide both numbers by the numerator.

Example:

$$\frac{3}{9} \div \left(\frac{3}{3}\right) = \frac{1}{3}$$

Step 2: Are both the numerator & denominator even? If so, divide both numbers by 2 until they are no longer even.

Example:

$$\frac{4}{10} \div \left(\frac{2}{2}\right) = \frac{2}{5}$$

Step 3: Do the numerator & denominator share any factors? If so, divide both numbers by that factor.

Example:

$$\frac{12}{15} \div \left(\frac{3}{3}\right) = \frac{4}{5}$$

Class Notes

Simplifying to Lowest Terms

1. Divide the numerator and denominator by their greatest common factor.

Example:

$$\frac{48}{54} \div \frac{6}{6} = \frac{8}{9}$$

$$\frac{30}{3} \div \frac{3}{3} = \frac{10}{1} = 10$$

Building to Higher Terms

1. Multiply the numerator and denominator by the same number.

Example:

$$\frac{8}{9} \cdot \frac{6}{6} = \frac{48}{54}$$

$$\frac{2}{7} \cdot \frac{2}{2} = \frac{4}{14}$$

$$\frac{2}{7} = \frac{4}{\quad}$$

Given 4 in the numerator, $4 \div 2 = 2$. Then multiply the denominator (7) by 2 = 14. If you are given the numerator or denominator, make it a dividend.

Practice 16

Write each fraction in simplest form.

1. $\frac{6}{8}$ = _____
2. $\frac{4}{10}$ = _____
3. $\frac{3}{9}$ = _____
4. $\frac{5}{10}$ = _____
5. $\frac{3}{6}$ = _____
6. $\frac{2}{8}$ = _____
7. $\frac{4}{12}$ = _____
8. $\frac{3}{12}$ = _____
9. $\frac{5}{15}$ = _____
10. $\frac{2}{10}$ = _____
11. $\frac{8}{16}$ = _____
12. $\frac{2}{14}$ = _____

Write yes if the fraction is written in simplest form or no if it is not in simplest form.

13. $\frac{2}{3}$ _____
14. $\frac{4}{6}$ _____
15. $\frac{1}{5}$ _____
16. $\frac{3}{4}$ _____
17. $\frac{8}{10}$ _____
18. $\frac{7}{9}$ _____
19. $\frac{5}{8}$ _____
20. $\frac{1}{10}$ _____
21. $\frac{3}{14}$ _____
22. $\frac{4}{16}$ _____
23. $\frac{4}{8}$ _____
24. $\frac{2}{4}$ _____

Mixed Numbers to Improper Fractions

$2\frac{2}{3}$ (+ over 2, x over 3)

Take your denominator, **MULTIPLY** it by your whole number, and **ADD** your numerator. Put that number over your original denominator.

$3 \times 2 = 6 + 2 = 8 = \frac{8}{3}$

$7\frac{8}{9} = 9x7 = 63 + 8 = 71 = \frac{71}{9}$ (+ over 8, x over 9)

You try:

$12\frac{4}{5}$

$42\frac{1}{3}$

Improper Fraction to Mixed Number

$\frac{8}{3}$ = 8 ÷ 3 = 2 full groups and a remainder of 2, which is recorded as a fraction = $2\frac{2}{3}$

$\frac{13}{7}$ = 13 ÷ 7 = 1 full group and a remainder of 6, which is recorded as a fraction = $1\frac{6}{7}$

You try:

$\frac{14}{8}$

$\frac{127}{3}$

LESSON 98 PRACTICE

Name _____

7

Change each mixed number to an improper fraction.

1. $1\frac{3}{4} =$ _____
2. $2\frac{3}{8} =$ _____
3. $1\frac{5}{8} =$ _____
4. $4\frac{2}{3} =$ _____
5. $1\frac{5}{7} =$ _____
6. $2\frac{5}{6} =$ _____
7. $3\frac{1}{5} =$ _____
8. $4\frac{1}{2} =$ _____
9. $2\frac{3}{5} =$ _____
10. $1\frac{1}{6} =$ _____
11. $4\frac{3}{7} =$ _____
12. $4\frac{1}{4} =$ _____
13. $1\frac{5}{6} =$ _____
14. $1\frac{2}{3} =$ _____
15. $3\frac{7}{8} =$ _____
16. $6\frac{1}{9} =$ _____
17. $7\frac{2}{5} =$ _____
18. $11\frac{3}{4} =$ _____
19. $8\frac{1}{4} =$ _____
20. $9\frac{2}{8} =$ _____
21. $10\frac{5}{7} =$ _____

Change each improper fraction to a mixed number.

22. $\frac{11}{4} =$ _____
23. $\frac{13}{6} =$ _____
24. $\frac{17}{3} =$ _____
25. $\frac{13}{8} =$ _____
26. $\frac{16}{7} =$ _____
27. $\frac{21}{5} =$ _____
28. $\frac{5}{2} =$ _____
29. $\frac{21}{6} =$ _____
30. $\frac{17}{4} =$ _____
31. $\frac{9}{5} =$ _____
32. $\frac{17}{7} =$ _____
33. $\frac{10}{3} =$ _____
34. $\frac{16}{5} =$ _____
35. $\frac{12}{7} =$ _____
36. $\frac{19}{8} =$ _____
37. $\frac{113}{10} =$ _____
38. $\frac{53}{6} =$ _____
39. $\frac{65}{9} =$ _____
40. $\frac{45}{7} =$ _____
41. $\frac{49}{5} =$ _____
42. $\frac{77}{8} =$ _____

Fractions

1. Write each division sentence as an improper fraction.
2. Then write the improper fraction as a mixed number.

	Division Sentence	Improper Fraction	Mixed Number
1.	$5 \div 3 =$		
2.	$11 \div 4 =$		
3.	$25 \div 7 =$		
4.	$32 \div 9 =$		
5.	$41 \div 8 =$		
6.	$19 \div 6 =$		
7.	$53 \div 10 =$		
8.	$17 \div 5 =$		
9.	$36 \div 7 =$		
10.	$43 \div 9 =$		
11.	$41 \div 6 =$		
12.	$53 \div 8 =$		
13.	$37 \div 5 =$		
14.	$33 \div 4 =$		
15.	$19 \div 2 =$		

Building fractions to higher terms: Find equivalent fractions for each of the following:

$\frac{5}{7}=\frac{x}{84}$ x = _____

$\frac{15}{16}=\frac{60}{x}$ x = _____

$\frac{7}{25}=\frac{x}{100}$ x = _____

$\frac{18}{19}=\frac{72}{x}$ x = _____

$\frac{4}{6}=\frac{x}{90}$ x = _____

$\frac{12}{14}=\frac{108}{x}$ x = _____

$\frac{9}{32}=\frac{x}{96}$ x = _____

$\frac{13}{15}=\frac{104}{x}$ x = _____

$\frac{7}{9}=\frac{x}{99}$ x = _____

$\frac{14}{18}=\frac{70}{x}$ x = _____

$\frac{5}{37}=\frac{x}{148}$ x = _____

$\frac{23}{27}=\frac{69}{x}$ x = _____

10

Name _____ Fractions of a Numbe

Study the box below. Then, solve each problem and write the answer in the space provided.

Rules:	Examples:	
To find $\frac{1}{2}$ of a number, divide by 2.	$\frac{1}{2}$ of 20 is 10.	$\frac{2}{5}$ of 15 is 6.
To find $\frac{1}{3}$ of a number, divide by 3.	Since $20 \div 2 = 10$, cutting 20 in half will give you 10.	Since $15 \div 5 = 3$, 3×2 will give you 6.
To find $\frac{1}{4}$ of a number, divide by 4.		

1. $\frac{1}{5}$ of 20 =
2. $\frac{1}{4}$ of 16 =
3. $\frac{1}{2}$ of 14 =
4. $\frac{1}{8}$ of 24 =
5. $\frac{1}{3}$ of 18 =
6. $\frac{1}{3}$ of 24 =
7. $\frac{1}{2}$ of 12 =
8. $\frac{1}{4}$ of 4 =
9. $\frac{1}{2}$ of 8 =
10. $\frac{2}{5}$ of 20 =
11. $\frac{1}{5}$ of 25 =
12. $\frac{3}{4}$ of 4 =
13. $\frac{2}{3}$ of 6 =
14. $\frac{2}{3}$ of 21 =
15. $\frac{3}{4}$ of 20 =
16. $\frac{2}{5}$ of 25 =
17. $\frac{3}{5}$ of 10 =
18. $\frac{4}{5}$ of 15 =
19. $\frac{2}{3}$ of 9 =
20. $\frac{3}{4}$ of 12 =
21. $\frac{3}{8}$ of 16 =

Total Problems: Total Correct: Score:

Adding Fractions

$\frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$

$\frac{1}{12} + \frac{1}{12} = \frac{2}{12} = \frac{1}{6}$

$\frac{3}{12} + \frac{1}{12} = \frac{4}{12} = \frac{1}{3}$

$\frac{3}{5} + \frac{3}{5} = \frac{6}{5} = 1\frac{1}{5}$

$\frac{1}{2} + \frac{1}{2} = \frac{2}{2} = 1$

- Add the numerators
- Keep the same denominators
- Simplify fractions when necessary

*When you have an improper fraction, change it to a mixed number.

*When the numerator and the denominator are the same, it equals 1 whole.

$$\begin{array}{r} 4\frac{2}{3} \\ +\,5\frac{2}{3} \\ \hline 9\frac{4}{3} \end{array} = 9 + 1\frac{1}{3} = 10\frac{1}{3}$$

$$\begin{array}{r} 6\frac{5}{7} \\ +\,13\frac{6}{7} \\ \hline 19\frac{11}{7} \end{array} = 19 + 1\frac{4}{7} = 20\frac{4}{7}$$

Subtracting Fractions

$\frac{2}{4} - \frac{1}{4} = \frac{1}{4}$

$\frac{4}{8} - \frac{3}{8} = \frac{1}{8}$

$\frac{4}{6} - \frac{2}{6} = \frac{2}{6} \div (\frac{2}{2}) = \frac{1}{3}$

- Only subtract the numerators
- Keep the denominator the same
- Simplify if needed

Subtracting Mixed Numbers

$$5\frac{4}{6}$$

$$-\ 4\frac{2}{6}$$

$1\frac{2}{6} \div (\frac{2}{2}) = 1\frac{1}{3}$

- Subtract the fraction first
- Subtract the whole number
- Simplify if needed

$12\frac{1}{4} + \frac{4}{4} = 11\frac{5}{4}$

$-3\frac{2}{4}$

$8\frac{3}{4}$

25

$-3\frac{2}{3}$

$24\frac{3}{3}$

$-3\frac{2}{3}$

$21\frac{1}{3}$

14

Name:_____ Date:_____

Adding Fractions with LIKE DENOMINATORS

Compute. Remember to reduce to lowest terms.

$\frac{3}{12} + \frac{5}{12} =$

$\frac{3}{5} + \frac{4}{5} =$

$\frac{3}{7} + \frac{2}{7} =$

$\frac{7}{8} + \frac{3}{8} =$

$\frac{1}{4} + \frac{3}{4} =$

$\frac{6}{11} + \frac{2}{11} =$

$\frac{4}{10} + \frac{5}{10} =$

$\frac{3}{6} + \frac{4}{6} =$

$\frac{1}{3} + \frac{1}{3} =$

$\frac{4}{18} + \frac{8}{18} =$

$\frac{2}{9} + \frac{4}{9} =$

$\frac{6}{12} + \frac{3}{12} =$

$\frac{8}{24} + \frac{7}{24} =$

$\frac{1}{6} + \frac{3}{6} =$

$\frac{5}{14} + \frac{2}{14} =$

$\frac{2}{16} + \frac{6}{16} =$

$\frac{4}{7} + \frac{6}{7} =$

$\frac{4}{5} + \frac{3}{5} =$

$\frac{3}{10} + \frac{4}{10} =$

$\frac{2}{9} + \frac{4}{9} =$

$\frac{5}{15} + \frac{7}{15} =$

$\frac{5}{11} + \frac{4}{11} =$

$\frac{2}{8} + \frac{4}{8} =$

$\frac{6}{21} + \frac{9}{21} =$

15

Name:_____ Date:_____

Subtracting Fractions with LIKE DENOMINATORS HOMEWORK

Compute. Remember to reduce to lowest terms.

$\frac{19}{21} - \frac{13}{21} =$

$\frac{25}{30} - \frac{15}{30} =$

$\frac{11}{12} - \frac{5}{12} =$

$\frac{5}{6} - \frac{3}{6} =$

$\frac{24}{25} - \frac{21}{25} =$

$\frac{14}{16} - \frac{2}{16} =$

$\frac{13}{14} - \frac{8}{14} =$

$\frac{8}{9} - \frac{5}{9} =$

$\frac{25}{28} - \frac{11}{28} =$

$\frac{32}{40} - \frac{12}{40} =$

$\frac{13}{15} - \frac{3}{15} =$

$\frac{15}{18} - \frac{3}{18} =$

$\frac{4}{5} - \frac{2}{5} =$

$\frac{10}{12} - \frac{4}{12} =$

$\frac{19}{22} - \frac{15}{22} =$

$\frac{31}{35} - \frac{11}{35} =$

$\frac{32}{36} - \frac{14}{36} =$

$\frac{15}{21} - \frac{8}{21} =$

$\frac{11}{14} - \frac{3}{14} =$

$\frac{25}{27} - \frac{7}{27} =$

$\frac{29}{30} - \frac{7}{30} =$

$\frac{14}{16} - \frac{6}{16} =$

$\frac{9}{10} - \frac{5}{10} =$

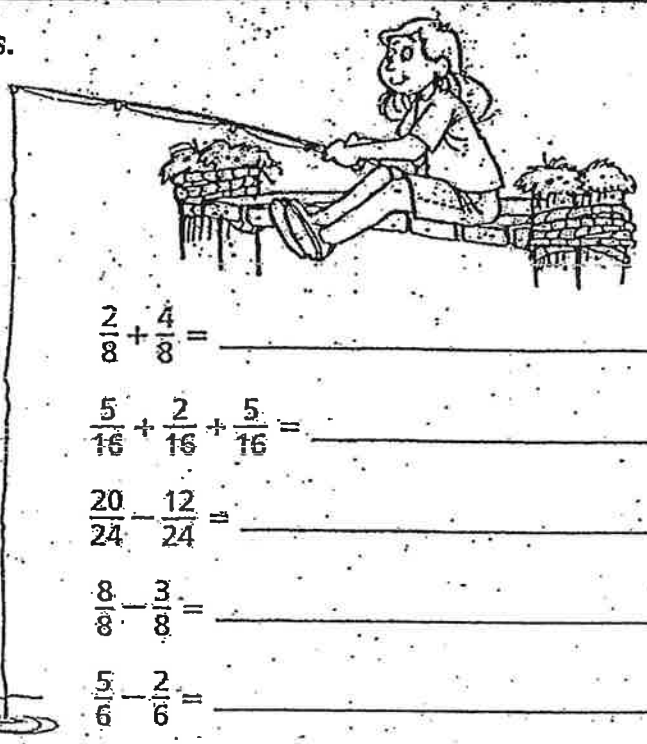
$\frac{7}{9} - \frac{5}{9} =$

Name _____ 16

Fishing for Sums and Differences

Adding and subtracting fractions with common denominators

Add or subtract. Write the answer in the lowest terms.



A. $\frac{1}{4} + \frac{2}{4} =$ $\frac{3}{4}$

B. $\frac{6}{18} + \frac{2}{18} =$ _____

C. $\frac{2}{3} - \frac{1}{3} =$ _____

D. $\frac{11}{12} - \frac{5}{12} =$ _____

E. $\frac{5}{16} + \frac{1}{16} + \frac{2}{16} =$ _____

F. $\frac{5}{6} - \frac{3}{6} =$ _____

G. $\frac{2}{18} + \frac{4}{18} + \frac{3}{18} =$ _____

H. $\frac{2}{6} + \frac{3}{6} =$ _____

I. $\frac{8}{15} - \frac{2}{15} =$ _____

J. $\frac{2}{10} + \frac{4}{10} + \frac{3}{10} =$ _____

K. $\frac{12}{14} - \frac{10}{14} =$ _____

L. $\frac{3}{7} + \frac{2}{7} =$ _____

M. $\frac{5}{5} - \frac{1}{5} =$ _____

N. $\frac{1}{20} + \frac{3}{20} + \frac{1}{20} =$ _____

O. $\frac{12}{10} - \frac{2}{10} =$ _____

P. $\frac{3}{13} + \frac{7}{13} =$ _____

Q. $\frac{8}{9} - \frac{3}{9} =$ _____

$\frac{2}{8} + \frac{4}{8} =$ _____

$\frac{5}{16} + \frac{2}{16} + \frac{5}{16} =$ _____

$\frac{20}{24} - \frac{12}{24} =$ _____

$\frac{8}{8} - \frac{3}{8} =$ _____

$\frac{5}{6} - \frac{2}{6} =$ _____

$\frac{7}{8} - \frac{3}{8} =$ _____

$\frac{7}{15} + \frac{3}{15} =$ _____

$\frac{6}{7} - \frac{3}{7} =$ _____

$\frac{5}{16} + \frac{3}{16} =$ _____

$\frac{4}{20} + \frac{5}{20} + \frac{7}{20} =$ _____

$\frac{7}{8} - \frac{1}{8} =$ _____

$\frac{1}{5} + \frac{3}{5} =$ _____

$\frac{3}{12} + \frac{6}{12} =$ _____

$\frac{9}{10} - \frac{7}{10} =$ _____

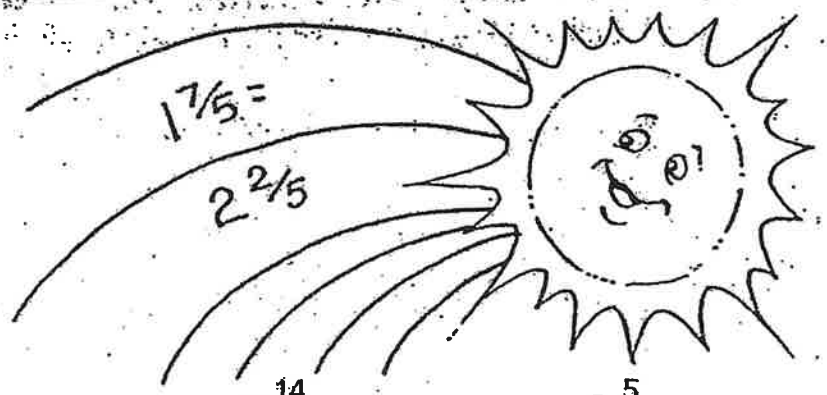
$\frac{11}{16} - \frac{7}{16} =$ _____

Name _____

A Sunny Day

Adding mixed numbers with renaming sums

Add. Write the answers in simplest form.



A.

$1\frac{1}{2} + \frac{1}{2} = 1\frac{2}{2} = 2$

$1\frac{3}{4} + 5\frac{1}{4}$

B.

$11\frac{2}{5} + 4\frac{4}{5}$

$3\frac{13}{16} + 4\frac{9}{16}$

$7\frac{14}{15} + 5\frac{8}{15}$

$6\frac{5}{6} + \frac{4}{6}$

C.

$7\frac{2}{8} + 3\frac{7}{8}$

$4\frac{13}{20} + 6\frac{11}{20}$

$1\frac{5}{6} + 2\frac{1}{6}$

$7\frac{3}{4} + 2\frac{2}{4}$

D.

$1\frac{2}{3} + 3\frac{2}{3}$

$\frac{11}{18} + 9\frac{15}{18}$

$3\frac{7}{10} + 2\frac{3}{10}$

$3\frac{5}{9} + 1\frac{6}{9}$

E.

$15\frac{2}{8} + 10\frac{6}{8}$

$2\frac{11}{12} + \frac{3}{12}$

$2\frac{4}{7} + 2\frac{3}{7}$

$4\frac{5}{7} + 2\frac{3}{7}$

F.

$1\frac{5}{6} + \frac{3}{6}$

$12\frac{8}{9} + 2\frac{5}{9}$

$10\frac{3}{6} + 4\frac{4}{6}$

$3\frac{7}{8} + 5\frac{4}{8}$

Name _____ 18

24

Who Can Subtract?

Subtracting mixed numbers with like denominators

Steps to subtract mixed numbers:

1. Subtract the fractions.
2. Subtract the whole numbers.

Subtract.

A $4\frac{2}{5} - 1\frac{1}{5}$

B $6\frac{5}{6} - \frac{4}{6}$

C $5\frac{3}{4} - 2\frac{1}{4}$

D $9\frac{15}{16} - 3\frac{9}{16}$

E $3\frac{13}{28} - 1\frac{9}{28}$

F $4\frac{15}{33} - 2\frac{7}{33}$

G $2\frac{7}{8} - 1\frac{4}{8}$

H $3\frac{3}{12} - 1\frac{1}{12}$

I $8\frac{4}{5} - 7\frac{1}{5}$

J $3\frac{7}{8} - 2\frac{7}{8}$

K $11\frac{4}{9} - 2\frac{2}{9}$

L $15\frac{8}{9} - 12\frac{6}{9}$

Name: _____

Adding + Subtracting Mixed #s

$$3\frac{3}{8} + 2\frac{1}{8}$$

$$3\frac{3}{8} + 2\frac{1}{8} \quad \text{(same)} \quad \frac{}{8}$$

$$3\frac{3}{8} + 2\frac{1}{8} \quad (+) \quad \frac{4}{8}$$

$$3\frac{3}{8} + 2\frac{1}{8} = 5\frac{4}{8}$$

$$3\frac{3}{8} + 2\frac{1}{8} = 5\frac{4}{8} = 5\frac{1}{2}$$

Add the fractions and simplify the answers.

a. $5\frac{2}{6} - 4\frac{2}{6}$

b. $6\frac{1}{4} + 1\frac{1}{4}$

c. $3\frac{2}{10} + 5\frac{3}{10}$

d. $3\frac{2}{8} + 6\frac{4}{8}$

e. $3\frac{2}{9} - 1\frac{1}{9}$

f. $2\frac{3}{12} - \frac{1}{12}$

g. $1\frac{3}{10} + 5\frac{5}{10}$

h. $2\frac{3}{14} + 1\frac{3}{14}$

i. $\frac{1}{6} + 4\frac{2}{6}$

j. $2\frac{1}{8} + 4\frac{1}{8}$

k. $2\frac{2}{9} + 3\frac{4}{9}$

l. $1\frac{3}{12} + 1\frac{3}{12}$

m. $6\frac{4}{10} - 2\frac{2}{10}$

n. $5\frac{6}{14} - \frac{4}{14}$

o. $1\frac{2}{12} + 7\frac{4}{12}$

p. Tom's family ate $1\frac{2}{8}$ apple pies.
Susie's family ate $1\frac{4}{8}$ cherry pies.
How much pie did both families eat?

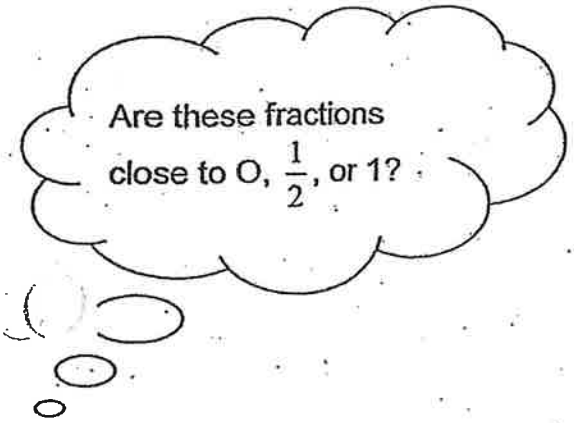
Estimating Fractions – Using 0, $\frac{1}{2}$, and 1.

A fraction is close to:

0 ⟶ when the numerator is very small compared to the denominator.

$\frac{1}{2}$ ⟶ when the numerator is about half the size of the denominator.

1 ⟶ when the numerator is very close in size to the denominator.



a) $\frac{2}{51}$ b) $\frac{8}{9}$ c) $\frac{7}{16}$ d) $\frac{1}{22}$

e) $\frac{12}{14}$ f) $\frac{6}{13}$ g) $\frac{5}{37}$ h) $\frac{11}{12}$

i) $\frac{31}{38}$ j) $\frac{7}{60}$ k) $\frac{20}{45}$ l) $\frac{17}{19}$

Finish these fractions so they are close to but less than 1.

$\frac{\quad}{9}$ $\frac{\quad}{13}$ $\frac{\quad}{34}$ $\frac{\quad}{42}$ $\frac{\quad}{55}$ $\frac{14}{\quad}$ $\frac{2}{\quad}$ $\frac{23}{\quad}$ $\frac{43}{\quad}$ $\frac{52}{\quad}$

Finish these fractions so they are close to but greater than $\frac{1}{2}$.

$\frac{\quad}{8}$ $\frac{\quad}{18}$ $\frac{\quad}{31}$ $\frac{\quad}{48}$ $\frac{\quad}{51}$ $\frac{16}{\quad}$ $\frac{25}{\quad}$ $\frac{35}{\quad}$ $\frac{44}{\quad}$ $\frac{55}{\quad}$

Estimation with Fractions

Estimate whether each of the following fractions is closest to 0, $\frac{1}{2}$, or 1.

1. $\frac{15}{30}$
2. $\frac{3}{29}$
3. $\frac{9}{21}$
4. $\frac{7}{15}$
5. $\frac{36}{42}$
6. $\frac{4}{25}$
7. $\frac{21}{45}$
8. $\frac{43}{92}$
9. $\frac{33}{40}$
10. $\frac{18}{34}$
11. $\frac{28}{31}$
12. $\frac{8}{56}$

Create four different fractions which are exactly equal to $\frac{1}{2}$.

Create four different fractions which are slightly more than $\frac{1}{2}$.

Create four different fractions which are slightly less than $\frac{1}{2}$.

Create four different fractions which are close to 0.

Create four different fractions which are close to 1.

Comparing Fractions

❖ Comparing fractions with same denominators:

*If fractions have the **SAME DENOMINATORS**, compare the numerators.*

(larger numerator= larger fraction)

Example:

❖ Comparing fractions with same numerators:

*If fractions have the **SAME NUMERATORS**, look at the denominators.*

(larger denominator= smaller fraction)

Example:

❖ Comparing fractions with equal difference between the numerator and denominator:

Find the "missing piece" needed to complete the whole.

(closer to one whole= greater fraction)

Example:

- You can also find the least common denominator (LCD). Once you change the fractions, just compare the numerators.

Example:

- You can also use Cross Products. The "new" numerator will determine the greater fraction.

Example:

Ordering Fractions

Options:

A: Use less than ½, = ½, or greater than ½ strategy (Where would they fall on the number line?)

B: Use a combination of the above strategies that you used to compare

C: You can find the LCM of all denominators and build all fractions to higher terms

Comparing Fractions

Compare using $<, >, =$

1) $\frac{2}{7}$ ___ $\frac{2}{11}$

2) $\frac{5}{16}$ ___ $\frac{5}{7}$

3) $\frac{7}{12}$ ___ $\frac{7}{25}$

4) $\frac{4}{9}$ ___ $\frac{7}{9}$

5) $\frac{11}{20}$ ___ $\frac{19}{20}$

6) $\frac{39}{100}$ ___ $\frac{72}{100}$

7) $\frac{5}{6}$ ___ $\frac{11}{12}$

8) $\frac{3}{4}$ ___ $\frac{8}{9}$

9) $\frac{14}{15}$ ___ $\frac{94}{95}$

10) $\frac{12}{13}$ ___ $\frac{49}{50}$

11) $\frac{29}{30}$ ___ $\frac{18}{19}$

12) $\frac{99}{100}$ ___ $\frac{2}{3}$

13) $\frac{7}{10}$ ___ $\frac{97}{100}$

14) $\frac{16}{20}$ ___ $\frac{4}{8}$

15) $\frac{2}{5}$ ___ $\frac{47}{50}$

16) Write you own "comparing fractions" problem using <u>like numerators</u>:

17) Write your own "comparing fractions" problem using <u>like denominators</u>:

18) Write your own "comparing fractions" problem using <u>same difference</u>:

Name:_____ Date:_____

Comparing and Ordering Fractions Homework

Compare. Write < , > , or =.

1. $\frac{3}{6}$ $\frac{5}{6}$

2. $\frac{7}{10}$ $\frac{9}{10}$

3. $\frac{3}{8}$ $\frac{7}{8}$

4. $\frac{5}{6}$ $\frac{3}{9}$

5. $\frac{8}{9}$ $\frac{5}{9}$

6. $\frac{3}{4}$ $\frac{8}{15}$

7. $\frac{1}{2}$ $\frac{7}{8}$

8. $\frac{5}{7}$ $\frac{1}{9}$

9. $\frac{2}{3}$ $\frac{9}{20}$

10. $\frac{7}{8}$ $\frac{1}{6}$

11. $\frac{2}{3}$ $\frac{6}{9}$

12. $\frac{6}{7}$ $\frac{2}{7}$

13. $\frac{5}{9}$ $\frac{9}{9}$

14. $\frac{7}{14}$ $\frac{2}{5}$

15. $\frac{7}{12}$ $\frac{3}{4}$

16. $\frac{2}{5}$ $\frac{4}{10}$

17. $\frac{5}{7}$ $\frac{3}{7}$

18. $\frac{1}{8}$ $\frac{3}{8}$

19. $\frac{3}{4}$ $\frac{8}{15}$

20. $\frac{3}{4}$ $\frac{3}{9}$

Write in order from least to greatest.

21. $\frac{4}{7}$, $\frac{8}{9}$, $\frac{7}{18}$

22. $\frac{1}{8}$, $\frac{5}{6}$, $\frac{2}{4}$

23. $\frac{4}{5}$, $\frac{4}{6}$, $\frac{4}{9}$

Write in order from greatest to least.

24. $\frac{6}{13}$, $\frac{3}{4}$, $\frac{9}{10}$

25. $\frac{4}{5}$, $\frac{1}{7}$, $\frac{3}{8}$

26. $\frac{5}{6}$, $\frac{2}{9}$, $\frac{1}{2}$

Finding a Common Denominator in Order to Add and Subtract Fractions

1. Check to see if one denominator is a factor of the other. If so, use the greater number as your common denominator.

2. If not, use subsequent division to find the least common multiple.

   Create an equivalent fraction with the least common denominator for each of the fractions by "building to higher terms."

3. Then add or subtract the fractions. Simplify to lowest terms.

Name: _____ Date: _____

Adding Fractions with UNLIKE DENOMINATORS

Compute. Remember to reduce to lowest terms.

$\frac{3}{12} + \frac{4}{6} =$

$\frac{1}{3} + \frac{3}{9} =$

$\frac{3}{4} + \frac{5}{6} =$

$\frac{2}{3} + \frac{3}{5} =$

$\frac{4}{6} + \frac{3}{8} =$

$\frac{3}{4} + \frac{3}{8} =$

$\frac{5}{12} + \frac{15}{18} =$

$\frac{4}{6} + \frac{3}{8} =$

$\frac{9}{12} + \frac{5}{6} =$

$\frac{5}{9} + \frac{7}{12} =$

$\frac{5}{8} + \frac{9}{10} =$

$\frac{2}{4} + \frac{5}{6} =$

$\frac{3}{15} + \frac{5}{9} =$

$\frac{5}{8} + \frac{6}{9} =$

$\frac{4}{9} + \frac{3}{4} =$

$\frac{9}{18} + \frac{5}{8} =$

One Won!

ind common denominators and add.
egroup if you need to.
rite your answer in simplest form.

$\frac{5}{6} = \frac{5}{6}$
$+\frac{2}{3} = +\frac{4}{6}$
$\frac{9}{6} = 1\frac{3}{6} = 1\frac{1}{2}$

$\frac{3}{4}$
$+\frac{3}{4}$

$5\frac{5}{8}$
$+\frac{5}{6}$

2. $2\frac{3}{5}$
$+3\frac{4}{5}$

$4\frac{1}{2}$
$+3\frac{3}{4}$

$1\frac{9}{10}$
$+3\frac{3}{5}$

$6\frac{1}{3}$
$+\frac{3}{4}$

$8\frac{1}{5}$
$+3\frac{2}{3}$

$9\frac{5}{6}$

6. $1\frac{3}{8}$
$+3\frac{1}{4}$

$\frac{9}{10}$
$+3\frac{9}{10}$

$2\frac{4}{5}$
$+3\frac{2}{3}$

8. $3\frac{5}{8}$
$+2\frac{1}{4}$

$3\frac{3}{4}$
$+4\frac{11}{12}$

$7\frac{5}{6}$
$+\frac{2}{3}$

Name: _____ Date: _____

Subtracting Fractions with UNLIKE DENOMINATORS HOMEWORK

Compute. Remember to reduce to lowest terms.

$\frac{5}{6} - \frac{2}{12} =$

$\frac{4}{5} - \frac{3}{30} =$

$\frac{7}{8} - \frac{1}{4} =$

$\frac{5}{6} - \frac{1}{4} =$

$\frac{7}{8} - \frac{1}{12} =$

$\frac{8}{9} - \frac{2}{6} =$

$\frac{13}{15} - \frac{5}{30} =$

$\frac{5}{6} - \frac{1}{18} =$

$\frac{6}{7} - \frac{3}{28} =$

$\frac{1}{2} - \frac{1}{4} =$

$\frac{7}{8} - \frac{2}{12} =$

$\frac{5}{6} - \frac{1}{3} =$

Name _____ 28

A Flower Garden

Subtracting from a whole numbe

Rename each whole number.

A. $1 = \frac{8}{8}$ $3 = 2\frac{6}{6}$ $4 = 3\frac{10}{10}$ $1 = \frac{5}{5}$

B. $15 = 14\frac{9}{9}$ $5 = 4\frac{4}{4}$ $2 = 1\frac{2}{2}$ $12 = 11\frac{7}{7}$

Rename each whole number. Then subtract.

C. $1 = \frac{10}{10}$
$-\ \frac{7}{10} = \frac{7}{10}$
$\frac{3}{10}$

$2 =$
$-1\frac{6}{11} =$

$4 =$
$-2\frac{1}{2} =$

D. $7 =$
$-3\frac{1}{4} =$

$5 =$
$-2\frac{3}{8} =$

$1 =$
$-\ \frac{2}{5} =$

E. $7 =$
$-3\frac{14}{15} =$

$5 =$
$-2\frac{9}{10} =$

$6 =$
$-2\frac{1}{6} =$

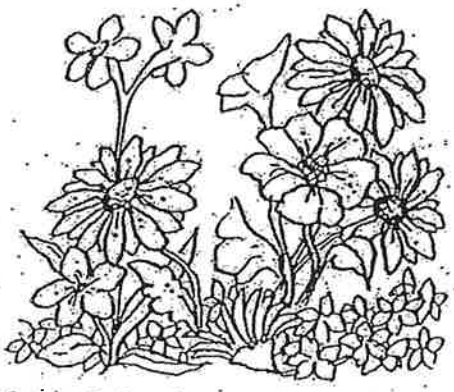
F. $12 =$
$-8\frac{7}{9} =$

$20 =$
$-13\frac{1}{4} =$

$16 =$
$-3\frac{5}{7} =$

G. $9 =$
$-8\frac{13}{20} =$

$14 =$
$-11\frac{5}{24} =$



Name 29

Subtraction of fractions from whole numbers

Unit 6

Borrow and regroup.

$3 - \frac{6}{9}$ → $2\frac{9}{9} - \frac{6}{9}$

Subtract.

$2\frac{9}{9} - \frac{6}{9} = 2\frac{3}{9}$

Reduce to lowest terms.

$2\frac{3}{9} = 2\frac{1}{3}$

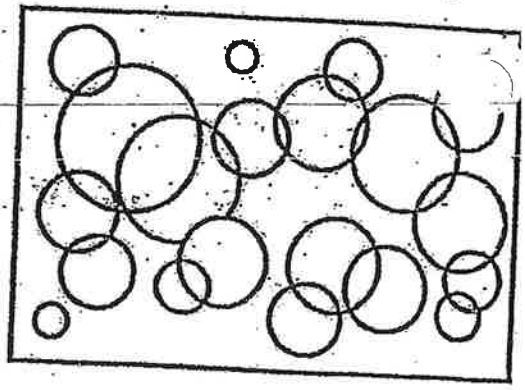
Subtract. Reduce to lowest terms.

1. $6 - \frac{3}{8}$
2. $5 - \frac{2}{14}$
3. $12 - \frac{5}{16}$
4. $8 - \frac{3}{7}$
5. $27 - \frac{14}{20}$
6. $10 - \frac{7}{15}$
7. $8 - \frac{3}{5}$
8. $14 - \frac{5}{6}$
9. $52 - \frac{3}{27}$
10. $15 - \frac{5}{6}$
11. $42 - \frac{7}{8}$
12. $21 - \frac{3}{4}$
13. $50 - \frac{3}{8}$
14. $61 - \frac{5}{9}$
15. $3 - \frac{2}{16}$
16. $9 - \frac{3}{7}$

Name: Date:

Teacher: Class:

Operations with Fractions



Calculate.

1. $7\frac{3}{8} + 3\frac{3}{7}$

2. $8\frac{8}{9} + \frac{5}{6}$

3. $2\frac{1}{4} - 1\frac{8}{10}$

4. $9\frac{7}{10} + 2\frac{2}{5}$

5. $3\frac{1}{6} - 1\frac{4}{11}$

6. $\frac{1}{10} + 1\frac{8}{10}$

7. $3\frac{1}{8} - 1\frac{7}{11}$

8. $1\frac{6}{9} - \frac{3}{10}$

Name _____ 31

First Things First.

Adding and subtracting fractions with different denominators

Write each fraction with the lowest common denominator. Then add or subtract. Write the answers in simplest form.

A. $\frac{1}{2}+\frac{3}{6}=$ $\frac{3}{6}+\frac{3}{6}=\frac{6}{6}=1$ $\quad\quad$ $\frac{3}{4}+\frac{1}{5}=$ _____

B. $\frac{1}{2}-\frac{3}{14}=$ _____ $\quad\quad$ $\frac{3}{8}+\frac{1}{6}=$ _____

C. $\frac{1}{3}+\frac{2}{4}=$ _____ $\quad\quad$ $\frac{6}{7}-\frac{1}{4}=$ _____

D. $\frac{7}{10}-\frac{1}{2}=$ _____ $\quad\quad$ $\frac{5}{12}+\frac{7}{8}=$ _____

E. $\frac{2}{8}+\frac{3}{4}=$ _____ $\quad\quad$ $\frac{5}{6}-\frac{3}{10}=$ _____

F.

$\frac{1}{2}=\frac{11}{22}=$
$+\ \frac{9}{11}=\frac{18}{22}=$
$\frac{29}{22}=1\frac{7}{22}$

$\frac{4}{5}=$
$-\ \frac{1}{6}=$
_____

$\frac{2}{3}=$
$-\ \frac{2}{7}=$
_____

G.

$\frac{3}{4}=$
$-\ \frac{1}{12}=$
_____

$\frac{5}{18}=$
$+\ \frac{2}{9}=$
_____

$\frac{3}{5}=$
$-\ \frac{4}{15}=$
_____

H.

$\frac{5}{7}=$
$-\ \frac{1}{2}=$
_____

$\frac{1}{6}=$
$+\ \frac{3}{4}=$
_____

$\frac{3}{8}=$
$-\ \frac{1}{3}=$
_____

I.

$\frac{1}{5}=$
$\frac{3}{20}=$
$+\ \frac{3}{4}=$
_____

$\frac{5}{9}=$
$\frac{1}{6}=$
$+\ \frac{2}{3}=$
_____

Name _____

Daisy Differences

Subtracting mixed numbers with renaming

Rename each mixed number.

A. $6\frac{2}{4} = 5\frac{6}{4}$ $\quad 2\frac{2}{9} = 1\frac{\square}{9}$ $\quad 3\frac{3}{10} = 2\frac{\square}{10}$ $\quad 1\frac{2}{3} = \frac{\square}{3}$

B. $4\frac{2}{7} = 3\frac{\square}{7}$ $\quad 10\frac{1}{2} = 9\frac{\square}{2}$ $\quad 5\frac{7}{18} = 4\frac{\square}{18}$ $\quad 11\frac{3}{6} = 10\frac{\square}{6}$

Rename the first mixed number. Then subtract. Write the answers in lowest terms.

C.
$4\frac{1}{4} = 3\frac{5}{4} =$
$-1\frac{3}{4} = 1\frac{3}{4} =$
$2\frac{2}{4} = 2\frac{1}{2}$

$6\frac{3}{8} =$
$-5\frac{5}{8} =$

$8\frac{2}{5} =$
$-2\frac{4}{5} =$

D.
$6\frac{1}{6} =$
$-2\frac{5}{6} =$

$4\frac{5}{8} =$
$-1\frac{7}{8} =$

$3\frac{1}{5} =$
$-1\frac{3}{5} =$

E.
$13\frac{3}{5} =$
$-4\frac{4}{5} =$

$7\frac{7}{16} =$
$-3\frac{11}{16} =$

$8\frac{4}{9} =$
$-2\frac{8}{9} =$

F.
$9\frac{3}{20} =$
$-6\frac{8}{20} =$

$6\frac{7}{10} =$
$-5\frac{8}{10} =$

$5\frac{1}{5} =$
$-1\frac{3}{5} =$

G.
$11\frac{2}{8} =$
$-5\frac{7}{8} =$

$5\frac{1}{5} =$
$-1\frac{3}{5} =$

32A

Subtracting Fractions (with Regrouping) Name:

Use regrouping to solve. Make sure your answer is not an improper fraction.

$2\frac{3}{7}$	$\frac{7}{8}$	$1\frac{5}{8}$	$\frac{2}{3}$
$4\frac{3}{5}$	$8\frac{2}{3}$	$1\frac{2}{3}$	$2\frac{3}{4}$
$\frac{4}{7}$	$1\frac{2}{4}$	$2\frac{7}{10}$	$5\frac{6}{9}$

1) $2\frac{1}{3} - 1\frac{2}{3} =$

2) $3\frac{1}{4} - 1\frac{3}{4} =$

3) $6\frac{1}{8} - 4\frac{4}{8} =$

4) $2\frac{2}{7} - 1\frac{5}{7} =$

5) $10\frac{1}{3} - 1\frac{2}{3} =$

6) $7\frac{2}{5} - 2\frac{4}{5} =$

7) $4\frac{1}{10} - 1\frac{4}{10} =$

8) $5\frac{1}{7} - 2\frac{5}{7} =$

9) $9\frac{4}{9} - 3\frac{7}{9} =$

10) $8\frac{1}{3} - 6\frac{2}{3} =$

11) $8\frac{2}{4} - 5\frac{3}{4} =$

12) $2\frac{4}{8} - 1\frac{5}{8} =$

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

1-10	92	83	75	67	58	50	42	33	25	17
11-12	8	0								

32B

Adding & Subtracting Mixed Number Fractions

Name:

Solve each problem.

1) $7\frac{1}{12} - 2\frac{10}{12} =$

2) $5\frac{4}{12} - 1\frac{3}{12} =$

3) $6\frac{8}{10} - 3\frac{1}{10} =$

4) $5\frac{1}{2} - 3\frac{1}{2} =$

5) $5\frac{7}{8} - 2\frac{4}{8} =$

6) $9\frac{2}{3} - 3\frac{2}{3} =$

7) $9\frac{2}{8} + 9\frac{2}{8} =$

8) $1\frac{1}{2} + 5\frac{1}{2} =$

9) $8\frac{2}{3} + 6\frac{2}{3} =$

10) $4\frac{2}{10} + 7\frac{1}{10} =$

11) $7\frac{1}{3} + 2\frac{1}{3} =$

12) $7\frac{1}{2} + 1\frac{1}{2} =$

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

1-10	92	83	75	67	58	50	42	33	25	17
11-12	8	0								

Name _____

33

Subtracting mixed numbers with unlike denominators

Drag Racer

Find common denominators and subtract. Regroup if you need to. Write the differences in simplest form.

A.

$3\frac{1}{3} = 3\frac{2}{6} = 2\frac{8}{6}$

$-\frac{5}{6} = \frac{5}{6} = \frac{5}{6}$

$2\frac{3}{6} = 2\frac{1}{2}$

$9\frac{1}{8}$

$-6\frac{5}{8}$

$6\frac{1}{5}$

$-1\frac{9}{10}$

B.

10

$-8\frac{1}{4}$

$8\frac{1}{4}$

$-\frac{2}{5}$

$7\frac{3}{8}$

$-7\frac{1}{4}$

C.

$8\frac{1}{4}$

$-3\frac{3}{4}$

$2\frac{4}{5}$

$-\frac{1}{2}$

5

$-3\frac{7}{9}$

D.

$3\frac{1}{2}$

$-\frac{2}{3}$

$6\frac{1}{8}$

$-3\frac{1}{4}$

$9\frac{3}{10}$

$-3\frac{1}{5}$

E.

5

$-4\frac{1}{2}$

$6\frac{1}{10}$

$-4\frac{4}{5}$

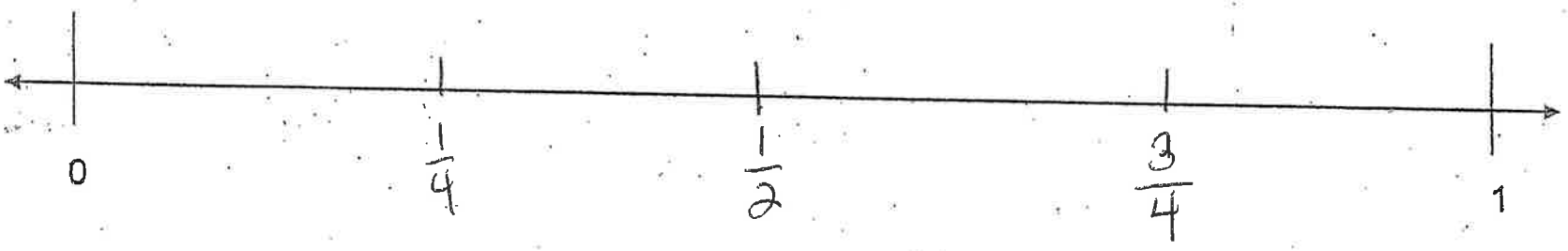
$7\frac{7}{8}$

$-\frac{3}{4}$

Estimating with Fractions

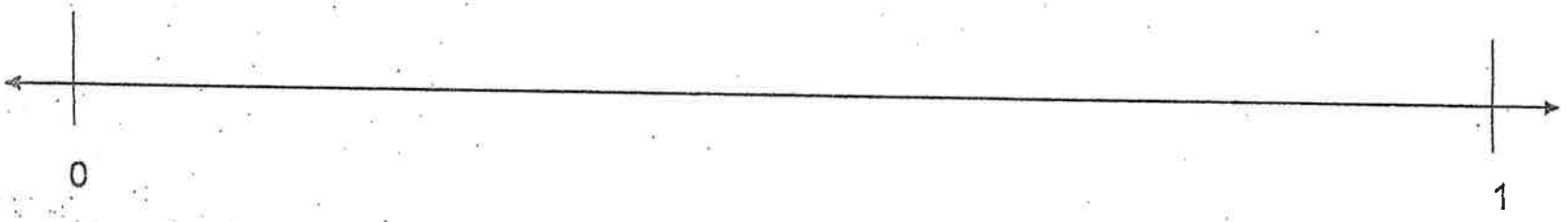
1. Place the following fractions on the number line below.

$$\frac{24}{25},\ \frac{1}{80},\ \frac{25}{50},\ \frac{4}{12},\ \frac{5}{20},\ \frac{75}{100}$$



2. Place the following fractions on the number line below.

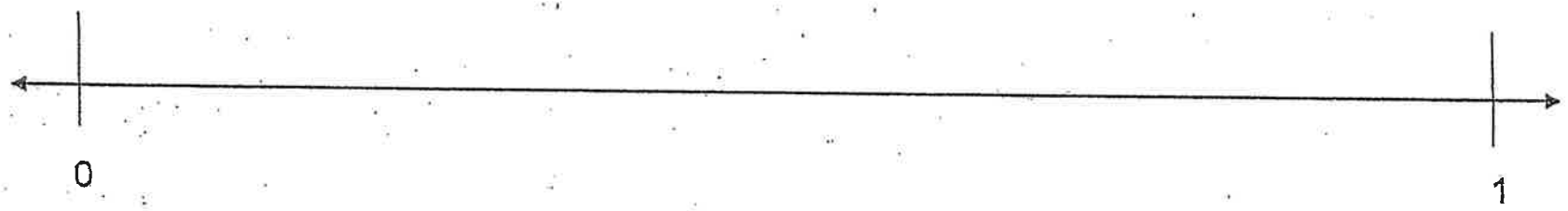
$$\frac{2}{95},\ \frac{65}{100},\ \frac{9}{63},\ \frac{4}{10},\ \frac{45}{49},\ \frac{52}{104}$$



Estimating with Fractions

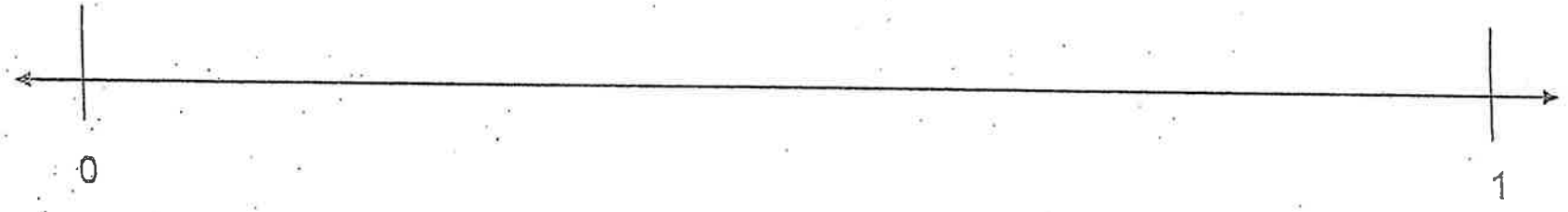
3. Place the following fractions on the number line below.

$$\frac{23}{42}, \quad \frac{9}{72}, \quad \frac{6}{10}, \quad \frac{89}{95}, \quad \frac{6}{18}, \quad \frac{12}{144}$$



4. Place the following fractions on the number line below.

$$\frac{11}{99}, \quad \frac{32}{68}, \quad \frac{87}{101}, \quad \frac{15}{60}, \quad \frac{51}{53}, \quad \frac{7}{77}$$



Fraction Word Problems

Erik ran $\frac{11}{13}$ of a mile on Sunday. Then he ran $\frac{6}{13}$ of a mile on Tuesday. How many miles did Erik run altogether?

Lauren drank 5 $\frac{1}{4}$ cups of water during the school day. Brian drank 7 $\frac{3}{4}$ cups of water. How much more did Brian drink than Lauren?

Janice ate $\frac{3}{8}$ of a birthday cake and Nicole ate $\frac{2}{5}$ of a birthday cake. How much did they eat altogether?

Kaitlyn walked $\frac{4}{9}$ of a mile and Christina walked $\frac{2}{4}$ of a mile. How much farther did Christina walk than Kaitlyn?

Name Date Time

Study Link 98: Fraction Problems

1. Dogs are owned by $36\frac{1}{2}$ percent of households in the United States. Birds are owned by $5\frac{7}{10}$ percent of households in the United States. What is the difference in percent of those households owning dogs and those owning birds? _____ %

2. The length of a typical blue whale is about $33\frac{1}{2}$ meters. The length of a typical pilot whale is about $6\frac{2}{5}$ meters. About how much longer is a blue whale? _____ m

3. President Bill Clinton is 6 feet $2\frac{1}{2}$ inches tall. The tallest president, Abraham Lincoln, was 6 feet 4 inches tall. What is the difference in these presidents' heights? _____ in

4. In 1978, Penny Lee Dean of the United States became the fastest person ever to swim across the English Channel. Her time was $7\frac{2}{3}$ hours. The second fastest time was $7\frac{11}{12}$ hours by Philip Rush of New Zealand. How much faster did Dean complete the swim than Rush? _____ hr

5. In 1993, $\frac{2}{5}$ of the energy used in the United States came from petroleum, $\frac{1}{4}$ came from natural gas, and $\frac{23}{100}$ came from coal. The remaining energy came from hydropower and nuclear power. What fraction of the energy used in the United States was from hydropower and nuclear power? _____

6. A Major-League baseball bat cannot be larger than $2\frac{3}{4}$ inches in diameter or longer than 42 inches. Little-league bats cannot be larger than $2\frac{1}{4}$ inches in diameter or longer than 33 inches. What is the difference in maximum diameter between a Major-League and a little-league bat? _____ in

   What is the difference in maximum length? _____ in

Sources: *The World Almanac for Kids 1996; The Top 10 of Everything.*

44 Name _____

At the Fair

Applications—Fractions

Travis and Tracy went to the county fair. Solve the problems. Remember to write the answers in simplest form.

A. Travis bought two boxes of taffy. One box weighed $\frac{3}{8}$ pound and the other weighed $\frac{7}{8}$ pound. What was the total weight?

B. Travis had $2\frac{1}{8}$ prize tickets. He wanted to get the race car, which was 9 prize tickets. How many more prize tickets did Travis need?

C. Tracy rode on the merry-go-round for $8\frac{9}{12}$ minutes. Then she rode on the ferris wheel for $7\frac{1}{12}$ minutes. How much longer did she ride on the merry-go-round than the ferris wheel?

D. Tracy spent $1\frac{3}{5}$ tickets on food and $1\frac{3}{5}$ tickets on rides. How many tickets did she spend in all?

E. Travis drank $1\frac{3}{16}$ cups of lemonade. Tracy drank $5\frac{7}{16}$ cups of lemonade. How many cups of lemonade did they drink in all?

F. Tracy played the ring toss game for 2 minutes, and Travis played for $1\frac{9}{11}$ minutes. How much longer did Tracy play than Travis?

G. Travis saw a watermelon that weighed $19\frac{3}{4}$ pounds and a tomato that weighed $5\frac{3}{8}$ pounds. How much more did the watermelon weigh than the tomato?

Name _____

Fraction Action

Adding and subtracting fractions and mixed numbers

Solve each problem.

A. When Brandon measured the vine on his mailbox in June, it was $2\frac{3}{4}$ feet high. By the end of July, it had grown $1\frac{1}{2}$ feet more. How high was the vine at the end of July?

_____

B. Harold bought two saplings. One sapling was $15\frac{1}{2}$ inches tall and the other was $25\frac{3}{7}$ inches tall. What is the difference in height between the two saplings?

_____

C. It rained $\frac{1}{2}$ inch on Monday, $1\frac{1}{3}$ inches on Tuesday, and $1\frac{3}{4}$ inches on Wednesday. How much did it rain in all for the three days?

_____

D. Joel mixed $1\frac{1}{6}$ cups of oil, $1\frac{1}{4}$ cups of water, and $1\frac{5}{8}$ cups of vinegar to make salad dressing. How much salad dressing did he make?

_____

E. Harry's workbench was $37\frac{3}{4}$ inches long. He bought an extension for it that was $22\frac{1}{4}$ inches long. After he attached the extension, how long was the workbench?

_____

F. The total weight for two plums is $10\frac{3}{4}$ ounces. One plum weighs $5\frac{1}{4}$ ounces. What is the weight of the other plum?

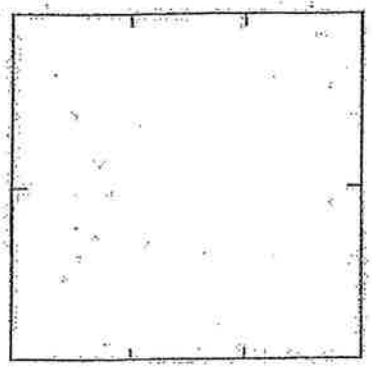
_____

G. Half of a large squash weighs $7\frac{1}{4}$ ounces. After the seeds are removed, it weighs only $4\frac{2}{5}$ ounces. How much do the seeds in the whole squash weigh?

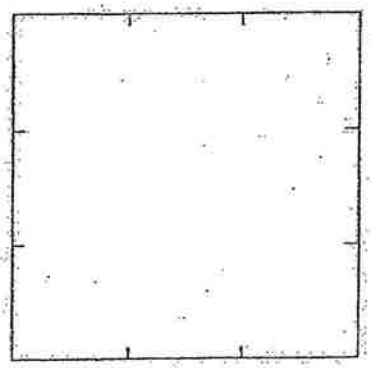
_____

Fraction Action 82

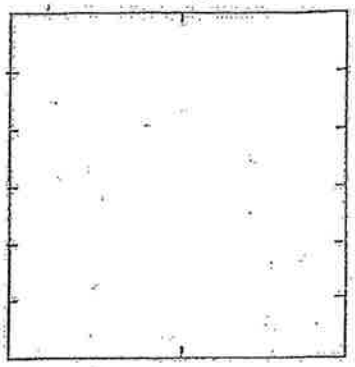
a. Please represent the problem graphically.
b. Determine the product from the drawing and complete the sentence.



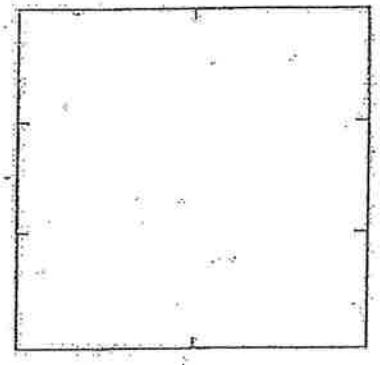
$\frac{1}{2} \times \frac{1}{3} =$



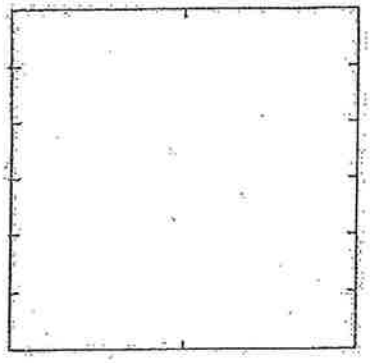
$\frac{2}{3} \times \frac{1}{3} =$



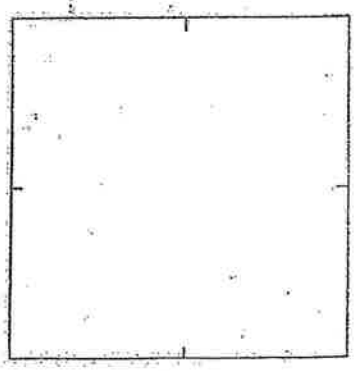
$\frac{1}{6} \times \frac{1}{2} =$



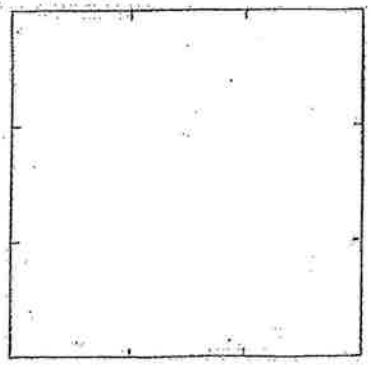
$\frac{2}{3} \times \frac{1}{2} =$



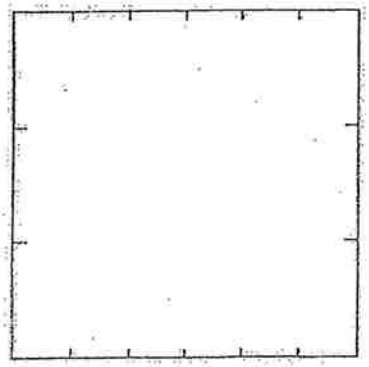
$\frac{5}{6} \times \frac{1}{2} =$



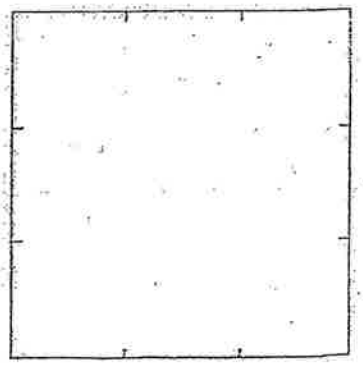
$\frac{1}{2} \times \frac{1}{2} =$



$\frac{1}{3} \times \frac{1}{3} =$



$\frac{2}{3} \times \frac{5}{6} =$

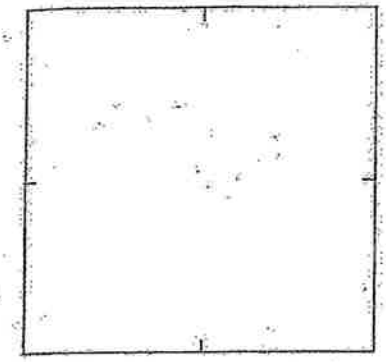


$\frac{2}{3} \times \frac{2}{3} =$

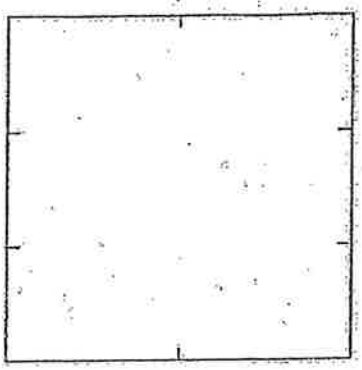
41

a. Please find the following products.
b. Check your result using the AIMS Fraction Squares.

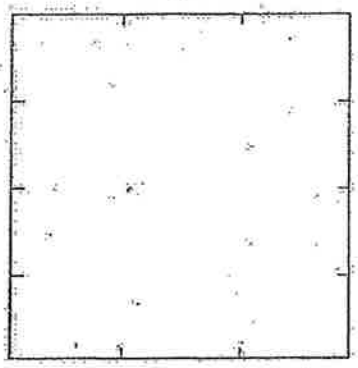
Fraction Action 82 = part 2



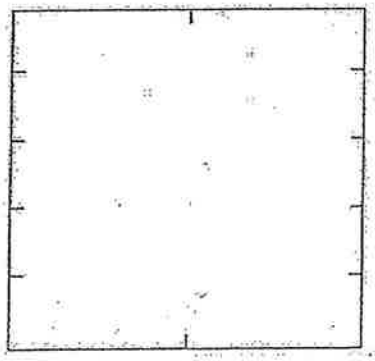
$\frac{1}{2} \times \frac{1}{2} =$



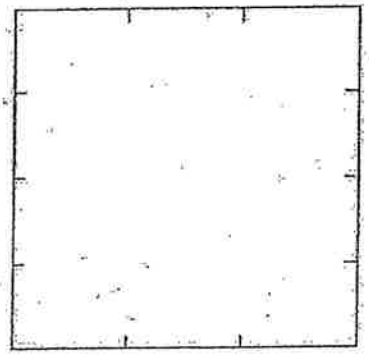
$\frac{2}{3} \times \frac{1}{2} =$



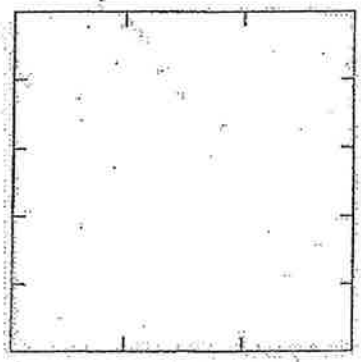
$\frac{3}{4} \times \frac{1}{3} =$



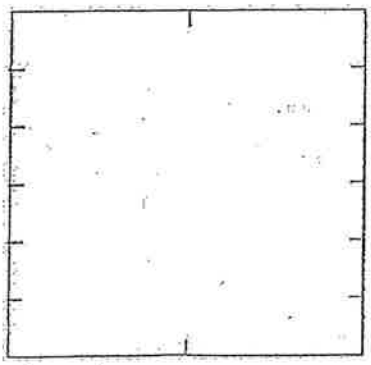
$\frac{2}{5} \times \frac{1}{2} =$



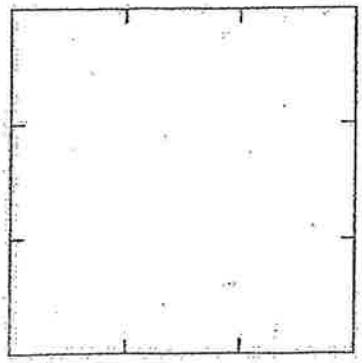
$\frac{1}{4} \times \frac{2}{3} =$



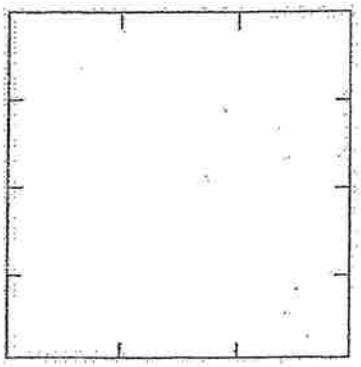
$\frac{3}{5} \times \frac{2}{3} =$



$\frac{1}{6} \times \frac{1}{2} =$



$\frac{2}{3} \times \frac{1}{3} =$



$\frac{3}{4} \times \frac{2}{3} =$

a. Please represent the problem graphically.
b. Determine the product from the drawing and complete the sentence.

Fraction Action 83

$\frac{1}{2} \times \frac{1}{4} =$

$\frac{3}{4} \times \frac{3}{4} =$

$\frac{1}{2} \times \frac{3}{8} =$

$\frac{1}{4} \times \frac{3}{4} =$

$\frac{3}{4} \times \frac{1}{2} =$

$\frac{1}{4} \times \frac{1}{4} =$

$\frac{5}{8} \times \frac{1}{2} =$

$\frac{3}{4} \times \frac{3}{4} =$

$\frac{7}{8} \times \frac{3}{4} =$

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Fraction Action 83 – part 2

Use your AIMS Fraction Squares to find the folowing products.

1. $\frac{1}{2} \times \frac{2}{5} =$

2. $\frac{1}{6} \times \frac{2}{3} =$

3. $\frac{1}{4} \times \frac{1}{4} =$

4. $\frac{3}{4} \times \frac{5}{6} =$

5. $\frac{3}{5} \times \frac{1}{2} =$

6. $\frac{1}{3} \times \frac{5}{6} =$

7. $\frac{2}{3} \times \frac{2}{3} =$

8. $\frac{2}{5} \times \frac{3}{5} =$

9. $\frac{1}{2} \times \frac{5}{6} =$

10. $\frac{1}{6} \times \frac{1}{3} =$

11. $\frac{2}{5} \times \frac{2}{3} =$

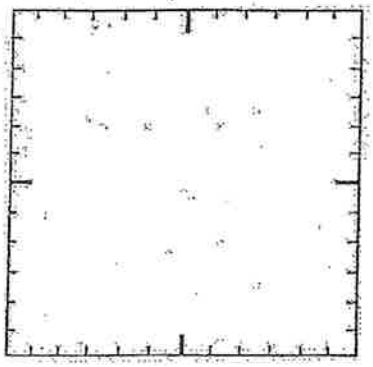
12. $\frac{5}{6} \times \frac{5}{6} =$

13. $\frac{3}{5} \times \frac{5}{6} =$

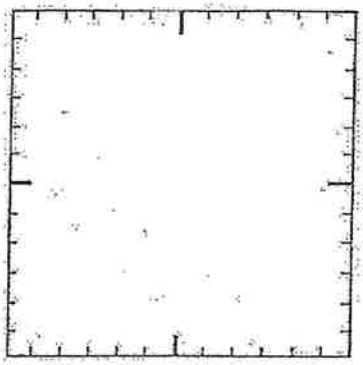
14. $\frac{1}{4} \times \frac{1}{6} =$

a. Please represent the problem graphically.
b. Determine the product from the drawing and complete the sentence.

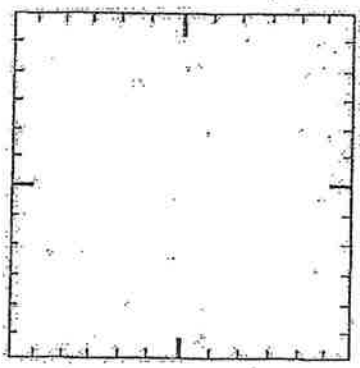
Fraction Action 84



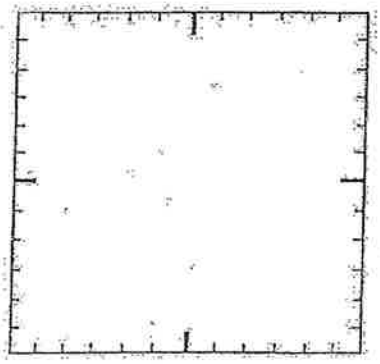
$\frac{1}{3} \times \frac{3}{4} =$



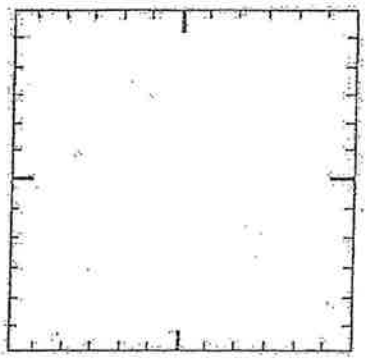
$\frac{1}{4} \times \frac{2}{3} =$



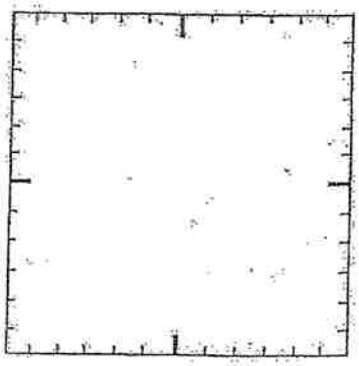
$\frac{3}{4} \times \frac{1}{6} =$



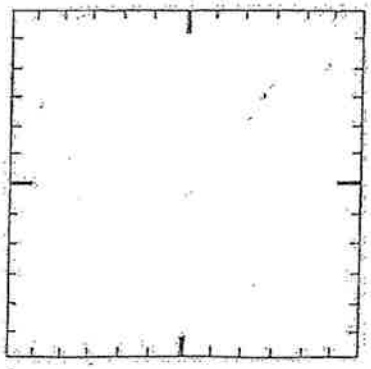
$\frac{1}{4} \times \frac{5}{6} =$



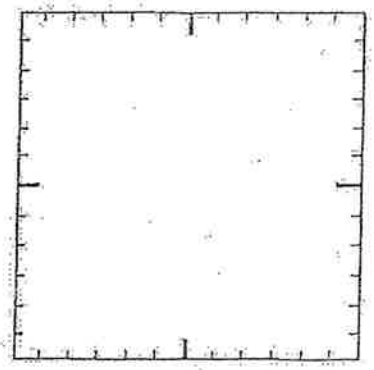
$\frac{1}{4} \times \frac{1}{3} =$



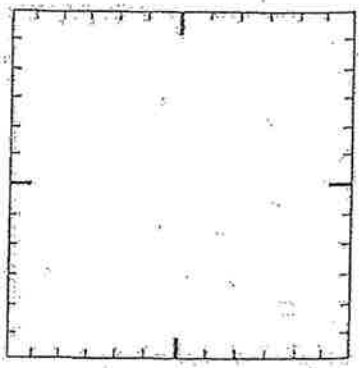
$\frac{5}{6} \times \frac{3}{4} =$



$\frac{2}{3} \times \frac{3}{4} =$



$\frac{1}{4} \times \frac{1}{6} =$



$\frac{3}{4} \times \frac{5}{12} =$

Fraction Action 84 – part 2

Use your AIMS Fraction Squares to find the folowing products.

1. $\frac{1}{3} \times \frac{1}{3} =$

2. $\frac{1}{4} \times \frac{5}{6} =$

3. $\frac{3}{4} \times \frac{3}{5} =$

4. $\frac{2}{5} \times \frac{5}{6} =$

5. $\frac{1}{2} \times \frac{1}{3} =$

6. $\frac{1}{4} \times \frac{1}{3} =$

7. $\frac{3}{5} \times \frac{1}{4} =$

8. $\frac{2}{3} \times \frac{1}{6} =$

9. $\frac{1}{3} \times \frac{1}{4} =$

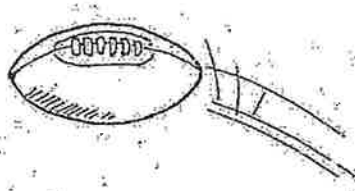
10. $\frac{3}{4} \times \frac{1}{2} =$

11. $\frac{3}{5} \times \frac{1}{3} =$

12. $\frac{2}{3} \times \frac{5}{6} =$

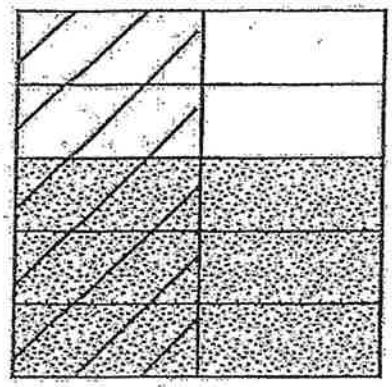
13. $\frac{1}{6} \times \frac{3}{4} =$

14. $\frac{3}{5} \times \frac{2}{5} =$

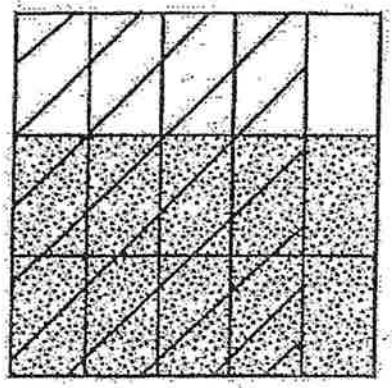


Fraction Action 85

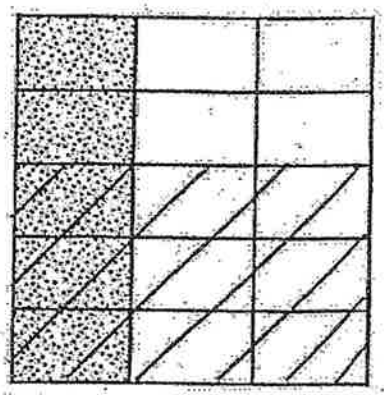
Determine the factors and products in the pictures.
Write the number sentence that describes each.



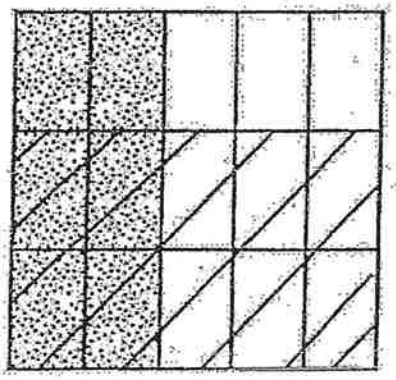
X =



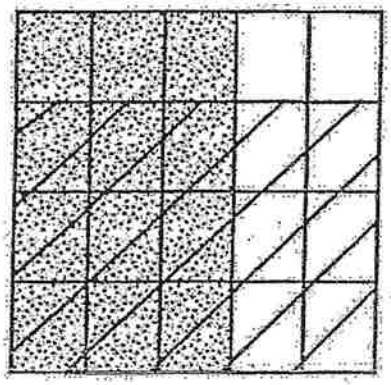
X =



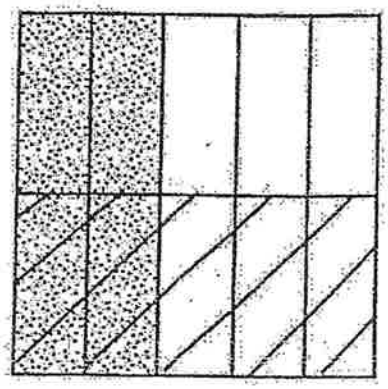
X =



X =



X =



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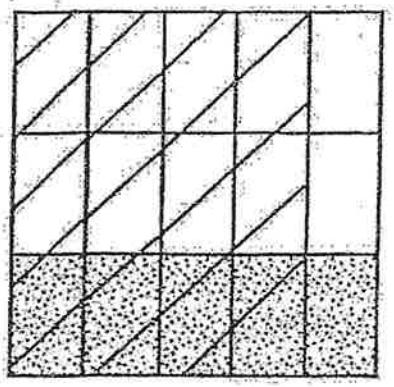

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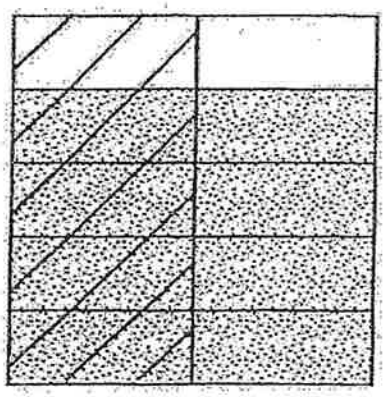

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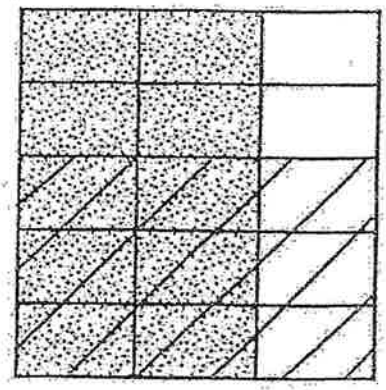
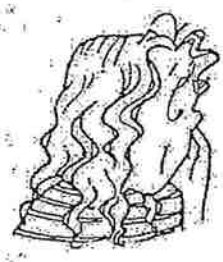
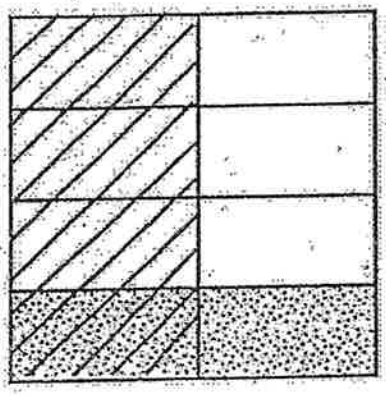


X =

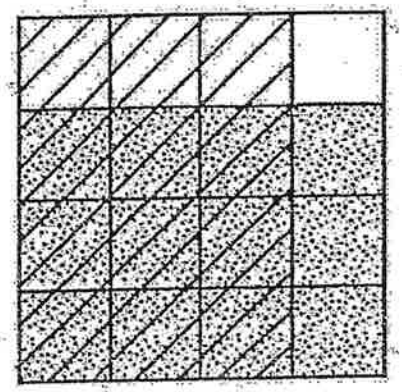


Fraction Action 86

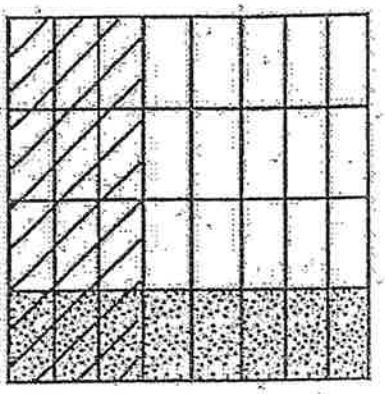
Determine the factors and products in the pictures.
Write the number sentence that describes each.



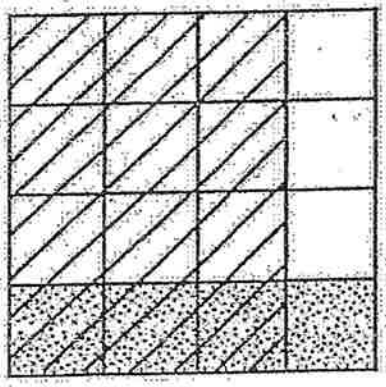
X =



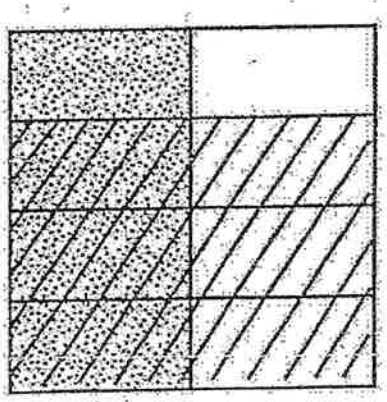
X =



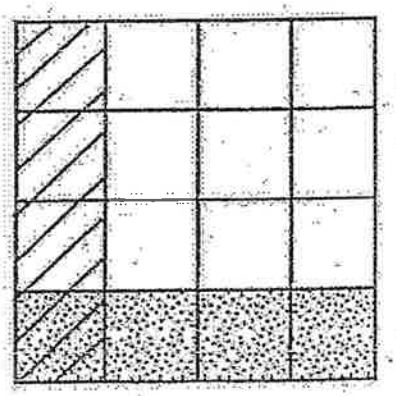
X =



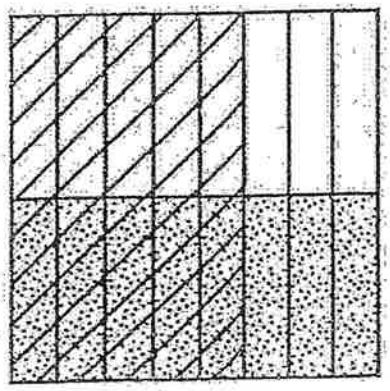
X =



X =



X =



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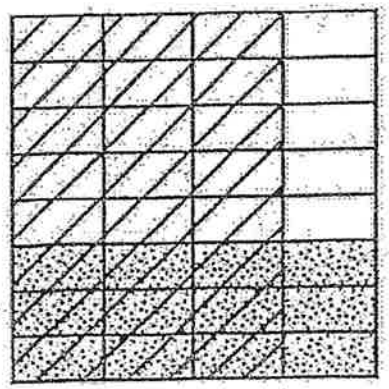
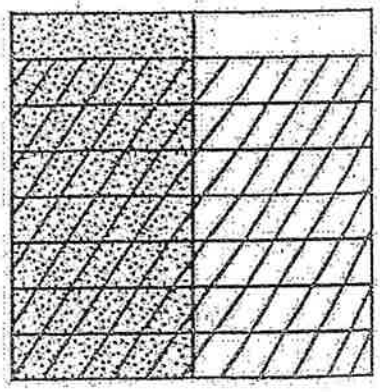


X =



X =

Multiplication of fractions:

Multiply the following fractions. Make sure your answer is in lowest terms.

1. $\frac{1}{3} \times \frac{1}{8} =$

2. $\frac{2}{7} \times \frac{1}{2} =$

3. $\frac{2}{3} \times \frac{6}{7} =$

4. $\frac{4}{5} \times \frac{1}{3} =$

5. $\frac{1}{2} \times \frac{7}{8} =$

6. $\frac{3}{5} \times \frac{1}{3} =$

7. $\frac{6}{7} \times \frac{1}{4} =$

8. $\frac{10}{13} \times \frac{2}{5} =$

9. $\frac{5}{7} \times \frac{1}{2} =$

10. $\frac{1}{3} \times \frac{1}{6} =$

11. $\frac{4}{5} \times \frac{3}{8} =$

12. $\frac{2}{3} \times \frac{3}{7} =$

13. $\frac{4}{7} \times \frac{1}{2} =$

14. $\frac{1}{8} \times \frac{1}{2} =$

15. $\frac{2}{5} \times \frac{1}{3} =$

16. $\frac{2}{3} \times \frac{5}{7} =$

17. $\frac{3}{8} \times \frac{3}{5} =$

18. $\frac{5}{6} \times \frac{1}{3} =$

Multiplication of fractions:

Multiply the following fractions. Make sure your answer is in lowest terms.

19. $\frac{4}{7} \times \frac{1}{4} =$

20. $\frac{1}{7} \times \frac{1}{2} =$

21. $\frac{2}{3} \times \frac{3}{4} =$

22. $\frac{1}{8} \times \frac{4}{5} =$

23. $\frac{1}{2} \times \frac{2}{6} =$

24. $\frac{4}{5} \times \frac{5}{6} =$

25. $\frac{1}{5} \times \frac{1}{3} =$

26. $\frac{6}{7} \times \frac{1}{2} =$

27. $\frac{3}{7} \times \frac{1}{2} =$

28. $\frac{2}{8} \times \frac{1}{2} =$

29. $\frac{3}{6} \times \frac{1}{2} =$

30. $\frac{4}{9} \times \frac{3}{8} =$

31. $\frac{2}{7} \times \frac{1}{4} =$

32. $\frac{9}{11} \times \frac{2}{3} =$

33. $\frac{3}{8} \times \frac{2}{3} =$

34. $\frac{4}{6} \times \frac{1}{2} =$

35. $\frac{4}{5} \times \frac{5}{12} =$

36. $\frac{6}{8} \times \frac{1}{2} =$

Multiplication of fractions:

Multiply the following fractions. Make sure your answer is in lowest terms.

37. $\frac{5}{8} \times \frac{7}{10} =$

38. $\frac{3}{4} \times \frac{8}{9} =$

39. $\frac{7}{12} \times \frac{3}{14} =$

40. $\frac{5}{8} \times \frac{9}{10} =$

41. Create two fractions whose product is $\frac{3}{8}$. ___ x ___ = ___

42. Create two fractions whose product is $\frac{5}{12}$. ___ x ___ = ___

Multiplication of fractions:

Multiply the following. Make sure your answer is in lowest terms.

1. $\frac{2}{3} \times 6 =$

2. $8 \times \frac{3}{4} =$

3. $15 \times \frac{3}{5} =$

4. $\frac{5}{8} \times 16 =$

5. $\frac{5}{7} \times 21 =$

6. $28 \times \frac{6}{7} =$

7. $24 \times \frac{7}{12} =$

8. $\frac{5}{9} \times 27 =$

9. $\frac{7}{8} \times 32 =$

10. $35 \times \frac{3}{7} =$

Multiplication of fractions:

Multiply the following. Make sure your answer is in lowest terms.

11. $\frac{5}{12} \times 48 =$

12. $42 \times \frac{4}{7} =$

13. $4 \times \frac{8}{9} =$

14. $\frac{5}{8} \times 24 =$

15. $\frac{5}{9} \times 36 =$

16. $10 \times \frac{5}{7} =$

17. $60 \times \frac{7}{12} =$

18. $\frac{9}{11} \times 44 =$

19. $\frac{3}{8} \times 56 =$

20. $6 \times \frac{3}{7} =$

Multiplication of fractions:

Multiply the following fractions. Make sure your answer is in lowest terms.

1. $\frac{2}{3} \times \frac{6}{10} =$

2. $\frac{2}{7} \times 28 =$

3. $\frac{2}{3} \times \frac{7}{8} =$

4. $\frac{3}{5} \times \frac{7}{9} =$

5. $18 \times \frac{5}{6} =$

6. $\frac{4}{7} \times \frac{14}{20} =$

7. $\frac{7}{12} \times \frac{29}{35} =$

8. $\frac{9}{11} \times \frac{22}{27} =$

9. $32 \times \frac{13}{16} =$

10. $\frac{1}{6} \times \frac{1}{12} =$

11. $\frac{4}{5} \times \frac{3}{12} =$

12. $\frac{2}{3} \times \frac{3}{10} =$

13. $24 \times \frac{7}{8} =$

14. $\frac{5}{8} \times \frac{1}{2} =$

15. $\frac{2}{5} \times \frac{7}{10} =$

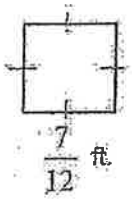
16. $\frac{2}{3} \times \frac{2}{3} =$

17. $\frac{3}{8} \times \frac{13}{15} =$

18. $\frac{5}{9} \times \frac{1}{3} =$

Perimeter and Area

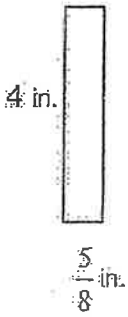
Find the perimeter and area of each figure.

1. 

Perimeter: _____ Area: _____

2. $\frac{1}{2}$ in. 

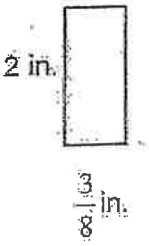
Perimeter: _____ Area: _____

3. 

Perimeter: _____ Area: _____

4. $\frac{2}{3}$ yd.  $\frac{5}{6}$ yd.

Perimeter: _____ Area: _____

5. 

Perimeter: _____ Area: _____

Division of fractions:

Divide the following fractions. Make sure your answer is in lowest terms.

1. $6 \div \frac{1}{2} =$

2. $8 \div \frac{1}{3} =$

3. $9 \div \frac{1}{4} =$

4. $7 \div \frac{1}{5} =$

5. $3 \div \frac{1}{8} =$

6. $2 \div \frac{1}{12} =$

7. $4 \div \frac{1}{6} =$

8. $5 \div \frac{1}{9} =$

9. $6 \div \frac{1}{7} =$

10. $10 \div \frac{1}{2} =$

11. $\frac{1}{2} \div 3 =$

12. $\frac{1}{3} \div 4 =$

13. $\frac{1}{6} \div 2 =$

14. $\frac{1}{4} \div 3 =$

15. $\frac{1}{8} \div 3 =$

16. $\frac{1}{5} \div 2 =$

17. $\frac{1}{3} \div 5 =$

18. $\frac{1}{10} \div 3 =$

Division of fractions:

Divide the following fractions. Make sure your answer is in lowest terms.

19. $\frac{1}{2} \div 6 =$

20. $7 \div \frac{1}{3} =$

21. $8 \div \frac{1}{4} =$

22. $\frac{1}{5} \div 6 =$

23. $\frac{1}{8} \div 4 =$

24. $12 \div \frac{1}{2} =$

25. $8 \div \frac{1}{6} =$

26. $\frac{1}{3} \div 3 =$

27. $6 \div \frac{1}{5} =$

28. $\frac{1}{5} \div 3 =$

29. $\frac{1}{6} \div 4 =$

30. $9 \div \frac{1}{2} =$

31. $4 \div \frac{1}{3} =$

32. $5 \div \frac{1}{4} =$

33. $\frac{1}{2} \div 8 =$

34. $\frac{1}{6} \div 3 =$

35. $12 \div \frac{1}{3} =$

36. $\frac{1}{4} \div 2 =$

Division of fractions:

Divide the following fractions. Make sure your answer is in lowest terms.

1. $6 \div \frac{1}{3} =$

2. $8 \div \frac{2}{5} =$

3. $9 \div \frac{1}{5} =$

4. $7 \div \frac{1}{4} =$

5. $3 \div \frac{6}{7} =$

6. $2 \div \frac{2}{3} =$

7. $4 \div \frac{2}{3} =$

8. $5 \div \frac{5}{6} =$

9. $6 \div \frac{1}{5} =$

10. $10 \div \frac{1}{3} =$

11. $\frac{1}{2} \div \frac{2}{3} =$

12. $\frac{1}{3} \div \frac{3}{4} =$

13. $\frac{1}{6} \div 3 =$

14. $\frac{1}{4} \div 4 =$

15. $\frac{1}{8} \div \frac{3}{4} =$

16. $\frac{1}{5} \div 4 =$

17. $\frac{1}{3} \div 6 =$

18. $\frac{1}{10} \div \frac{2}{5} =$

Division of fractions:

Divide the following fractions. Make sure your answer is in lowest terms.

19. $\frac{1}{2} \div 8 =$

20. $7 \div \frac{1}{2} =$

21. $8 \div \frac{4}{5} =$

22. $\frac{1}{5} \div \frac{3}{5} =$

23. $\frac{1}{8} \div 6 =$

24. $12 \div \frac{2}{3} =$

25. $8 \div \frac{1}{8} =$

26. $\frac{1}{3} \div 9 =$

27. $6 \div \frac{2}{3} =$

28. $\frac{1}{5} \div 5 =$

29. $\frac{1}{6} \div 12 =$

30. $9 \div \frac{1}{3} =$

31. $4 \div \frac{1}{4} =$

32. $5 \div \frac{2}{5} =$

33. $\frac{1}{2} \div 10 =$

34. $\frac{1}{6} \div \frac{2}{3} =$

35. $12 \div \frac{1}{4} =$

36. $\frac{1}{4} \div 6 =$

Multiplication and Division of fractions:

Multiply or divide the following fractions. Make sure your answer is in lowest terms.

1. $\frac{4}{5} \times \frac{3}{4} =$

2. $5 \div \frac{1}{3} =$

3. $\frac{14}{15} \times \frac{5}{6} =$

4. $\frac{1}{8} \div 2 =$

5. $4 \div \frac{1}{2} =$

6. $\frac{3}{4} \times \frac{2}{21} =$

7. $\frac{8}{9} \times \frac{6}{10} =$

8. $\frac{1}{6} \div 4 =$

9. $6 \div \frac{1}{6} =$

10. $\frac{7}{9} \times 27 =$

11. $\frac{1}{2} \div 5 =$

12. $\frac{7}{9} \times \frac{3}{14} =$

13. $32 \times \frac{5}{8} =$

14. $\frac{1}{4} \div 3 =$

15. $15 \div \frac{1}{3} =$

16. $\frac{9}{16} \times \frac{2}{3} =$

17. $28 \times \frac{5}{7} =$

18. $\frac{1}{5} \div 2 =$

Multiplication and Division of fractions:

Multiply or divide the following fractions. Make sure your answer is in lowest terms.

19. $\frac{3}{4} \div 6 =$

20. $\frac{2}{5} \div 3 =$

21. $8 \div \frac{3}{4} =$

22. $\frac{7}{10} \div \frac{1}{5} =$

23. $\frac{5}{9} \div 10 =$

24. $\frac{4}{5} \div 2 =$

25. $\frac{6}{7} \div 3 =$

26. $8 \div \frac{1}{3} =$

Word Problems with Fractions

Solve the following word problems. Make sure your answers are in lowest terms and you have labeled your answers.

Mrs. Smith's class took a field trip to the giant Candyville Factory. After touring the factory to see how candy was made, they shopped at the Candyville Sweet Shop.

1. The students learned that it took 45 cocoa beans to make one chocolate bar. How many beans would it take to make $\frac{1}{3}$ of a bar?

2. At the Sweet Shop, Marissa bought 3 dozen lollipops. If $\frac{3}{4}$ of the lollipops were peppermint, how many were not peppermint?

3. In the Taffy Room of the factory, the students saw a piece of taffy that stretched $\frac{2}{3}$ of a yard. If each student got $\frac{1}{4}$ of the taffy piece, how much did each student get?

4. The factory uses $\frac{3}{4}$ of a bag of flour every hour. There are two 8-hour shifts per work day. How many bags of flour does the factory use per work day?

5. Bob bought $\frac{1}{2}$ pound of fudge in the Sweet Shop. He ate $\frac{1}{3}$ of the fudge before he got home. How much fudge did Bob have when he got home?

Venture World is the newest, coolest amusement park in Metro City. Pam and Sue visited the park on opening day.

6. Pam wanted to ride the Super Looper Coaster as many times as she could before lunch. If she had 2 hours before lunch, and it took $\frac{1}{3}$ of an hour for each ride, how many rides did Pam get in?

7. Pam and Sue bought a large bag of M&M's to eat as a snack. They decided to eat $\frac{1}{2}$ of the bag at lunch time and share it with three of their friends. What part of the M&M bag did each person eat as their lunch-time snack?

8. Pam and Sue rented one Go-Cart for $\frac{3}{4}$ of an hour. They divided the time each person spent on the Go-Cart Speedway equally. How much time did Pam spend driving on the Go-Cart Speedway?

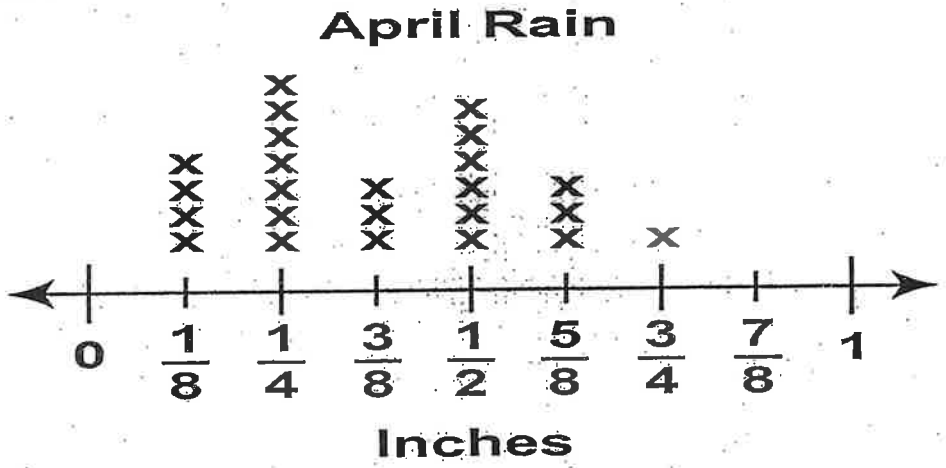
9. Sue brought $25.00 to spend on souvenirs at the park. By lunch time, she spent $\frac{2}{5}$ of her money. How much money did she spend by lunch time?

10. Pam bought a large Snicker's bar for a snack after dinner. She ate $\frac{1}{2}$ of the bar. Later on, Sue ate $\frac{1}{4}$ of what was left. How much of the candy bar is now left for Pam to bring home?

NJ ASK Mathematics Sample Item
Grades 5 ECR

Standard Assessed: 5.MD.2

During one day in April, rain gauges were set up in different locations around New Jersey to measure the amount of rainfall in inches. The line plot below shows the results.



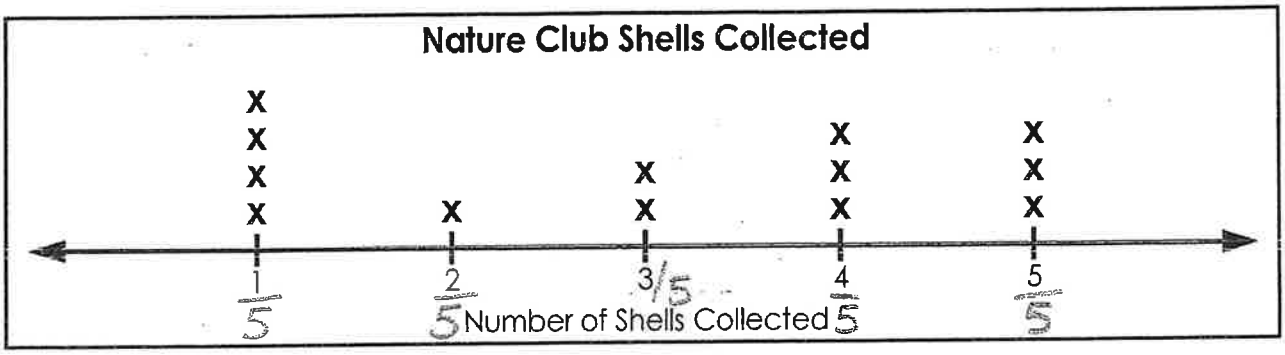
- What was the total amount of rain collected by all of the rain gauges? Show your work or explain your answer.
- If all the rain collected was poured equally among each of the rain gauges, how many inches of rain would be in each gauge? Show your work or explain your answer.

65

Name: _____

Line Plot: Median, Mean, Mode, and Range

The nature club at Westville Middle School went on a field trip to the seashore. Each member collected seashells to put on display at the school. The line plot below shows how many shells each club member collected.



1. What is the median number of shells collected? _____

2. What is the mode? _____

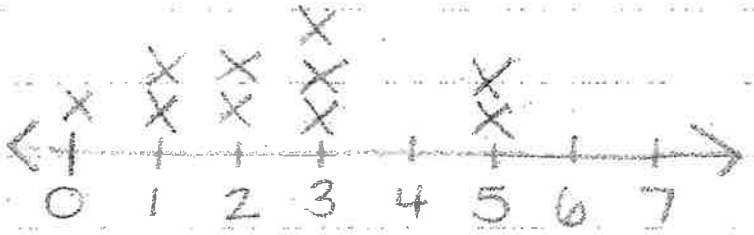
3. What is the range? _____

4. How many shells were collected in all? _____

5. What is the mean, or average, number of shells collected? _____

Line Plots with Fractions

Winter Snowfall



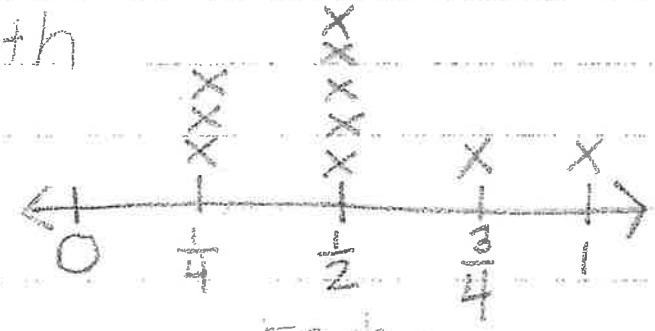
Range →

Median →

Mode →

Mean →

Plant Growth



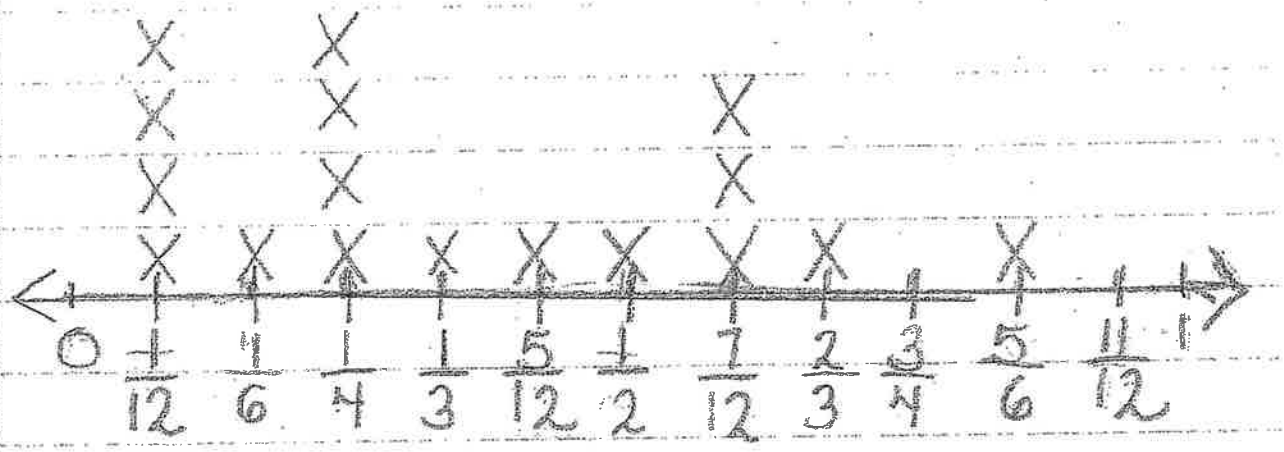
Range →

Mean →

Median →

Mode →

Monthly Hair Growth



Range →

Median →

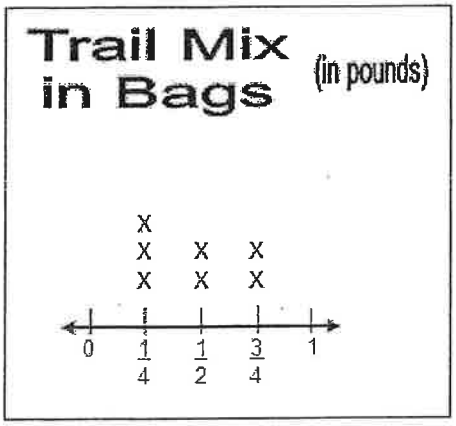
Mode →

Mean →

Name _____ 5.MD.2 Sheet A

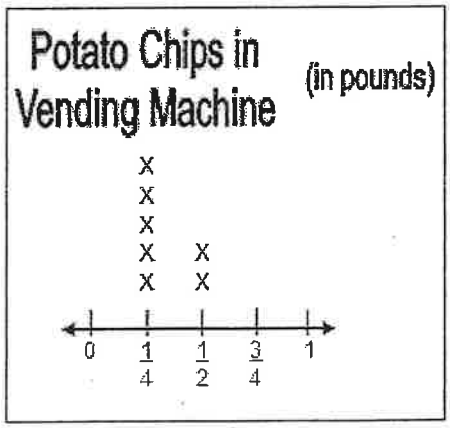
#1 ☐

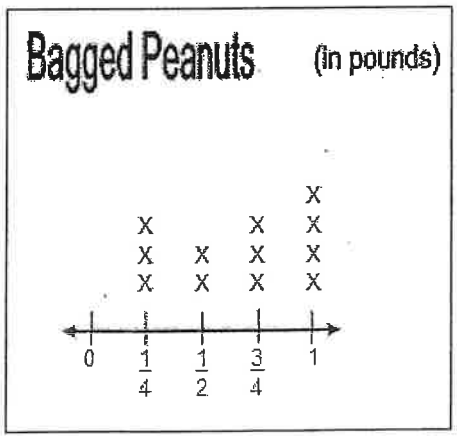
The line plot shows the different amounts of bagged trail mix that Mikaela bought at a health food store. How many pounds of trail mix did Mikaela buy?



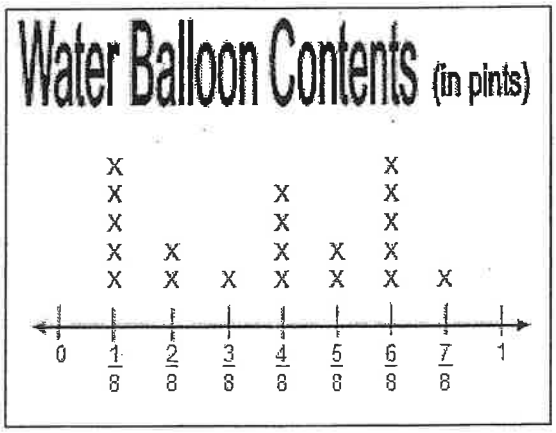
#2 ☐

The line plot shows the number of potato chips in a vending machine at the end of the week. How many pounds of potato chips are in the vending machine?





The line plot shows the number of pounds of bagged peanuts in bags on a store shelf. How many total pounds of bagged peanuts are on the shelf?



The line plot shows the amount of water that will be used by a clown to make water balloons for a birthday party. If the water was redistributed equally, how much would be in each balloon?

#3 ☐

#4 ☐

A track coach recorded how many miles each of his runners ran during practice.

Use the data to create a line plot according to the guidelines shown at the right.

$\frac{3}{4}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{1}{2}$ $\frac{1}{2}$

$\frac{1}{4}$ $\frac{3}{4}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$

#5 Give the plot a proper title, including units.

#6 Label the axis correctly.

#7 Plot the data accurately.

A cellular phone company collected data about how much time customers spend on the phone. The data displays the fraction of an hour customers spent on the phone on one day.

Use the data to create a line plot according to the guidelines shown at the right.

$\frac{3}{4}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{1}{2}$ $\frac{1}{2}$

$\frac{1}{4}$ $\frac{3}{4}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$

#8 Give the plot a proper title, including units.

#9 Label the axis correctly.

#10 Plot the data accurately.

Name Date Time

70

STUDY LINK 7•10

Scouting for Insects

Some insects are harmful to farmers' crops. The insects listed in this table are harmful to alfalfa crops. Farmers scout their crops and randomly collect sample plants. They regularly observe the plants and gather data to determine if the insect population is growing or remaining stable.

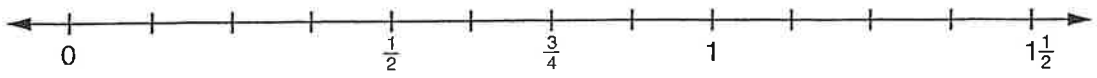
The table shows the result of one farmer's insect scouting.

Type of Insect	Average Length of Insect (in.)	Number of Insects
Alfalfa Weevil Larvae	$\frac{3}{8}$	4
Fall Armyworm	$1\frac{1}{4}$	1
Meadow Spittlebug	$\frac{1}{4}$	3
Pea Aphid	$\frac{1}{8}$	6
Potato Leafhopper	$\frac{1}{8}$	6

Plot and label the lengths of the insects from the scouting sample on the line plot below. Use the line plot to find the following data landmarks:

1. Minimum insect length _____ in.
2. Maximum insect length _____ in.
3. Range of insect lengths _____ in.
4. Median insect length _____ in.
5. Mean insect length _____ in.

Insect Lengths



Average Length (in.)

Name Date Time

STUDY LINK 7•10

Scouting for Insects

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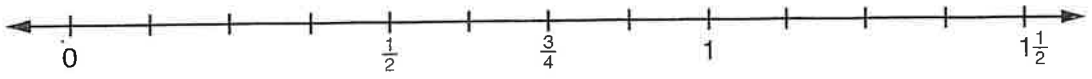
Plot and label the lengths of the insects from the scouting sample on the line plot below. Use the line plot to find the following data landmarks:

1. Minimum insect length _____ in.
2. Maximum insect length _____ in.
3. Range of insect lengths _____ in.
4. Median insect length _____ in.
5. Mean insect length _____ in.

Insect Lengths



Average Length (in.)

Name _____ Writing Fractions in Simplest Form

Take the Hints

Use the hints to identify each fraction. Write your answers in simplest form. Use your answers to break the code and find the answer to this riddle:

What goes up when the rain comes down?

A. My denominator is 8. I am equal to $\frac{49}{56}$. What fraction am I?	E. My denominator is 12, which is 4 more than my numerator. Write me in simplest form.
U. My numerator is equal to my denominator. Write me in simplest form.	A. My denominator is 5 more than my numerator. I am equal to $\frac{24}{64}$. What fraction am I?
L. My denominator is 1 more than my numerator. I am equal to $\frac{36}{42}$. What fraction am I?	N. My numerator is 5, which is 5 less than my denominator. Write me in simplest form.
R. My numerator is 39, which is 13 less than my denominator. Write me in simplest form.	L. I am equivalent to $\frac{60}{75}$. My denominator is 5. What fraction am I?
M. My numerator is 2 less than my denominator, which is 20. Write me in simplest form.	B. I am equivalent to $\frac{44}{64}$. Write me in simplest form.

___	___	___	___	___	___	___	___	___	___
$\frac{7}{8}$	$\frac{1}{2}$	1	$\frac{9}{10}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{2}{3}$	$\frac{4}{5}$	$\frac{6}{7}$	$\frac{3}{8}$

Guess My Fraction:

$\frac{1}{3}$ $\frac{7}{8}$ $\frac{1}{2}$ $\frac{3}{4}$

It is less than $\frac{21}{24}$

It is greater than $\frac{25}{75}$

It is NOT equal to $\frac{15}{20}$