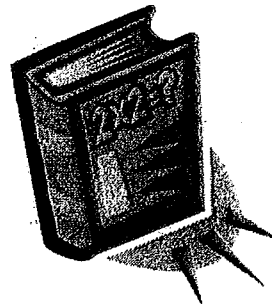


Directions: Please complete the even-numbered problems on each page. However, you may complete every problem on each page, if you wish.



# Summer Math

Entering  
6th grade



# Review 4

To *round* \$76.38 to the nearest dollar:

- ① Find the rounding place. \$76.38
- ② Look at the digit to the right. \$76.38
- ③ If that digit is less than 5, leave the digit in the rounding place as is. If the digit is 5 or greater, round up.

\$76.38 rounds to \$76.

You can use rounding to estimate a sum.

$$3.76 + 0.85 + 4.09$$

Round each number to the ones place.

$$3.76 \rightarrow 4$$

$$0.85 \rightarrow 1$$

$$4.09 \rightarrow 4$$

Then add. 9

The sum is about 9.

You can estimate decimal products, quotients, sums, and differences by using *compatible numbers*.

*Example 1* Estimate the product  $9.47 \times 3.81$

$9.47 \rightarrow 10$	Change to compatible numbers—numbers that are easy to multiply.
$\times 3.81 \rightarrow \times 4$	
40	

The product is about 40.

*Example 2* Estimate the quotient  $23.96 \div 4.78$ .

$23.96 \div 4.78$	Change to compatible numbers—numbers that are easy to divide.
$\downarrow \quad \downarrow$ $24 \div 4 = 6$	

The quotient is about 6.

Round each decimal to the nearest hundredth.

- |                  |                |                 |
|------------------|----------------|-----------------|
| 1. 1.679 _____   | 2. 4.981 _____ | 3. 12.602 _____ |
| 4. 32.9744 _____ | 5. 0.159 _____ | 6. 2.008 _____  |

Round each decimal to the nearest tenth.

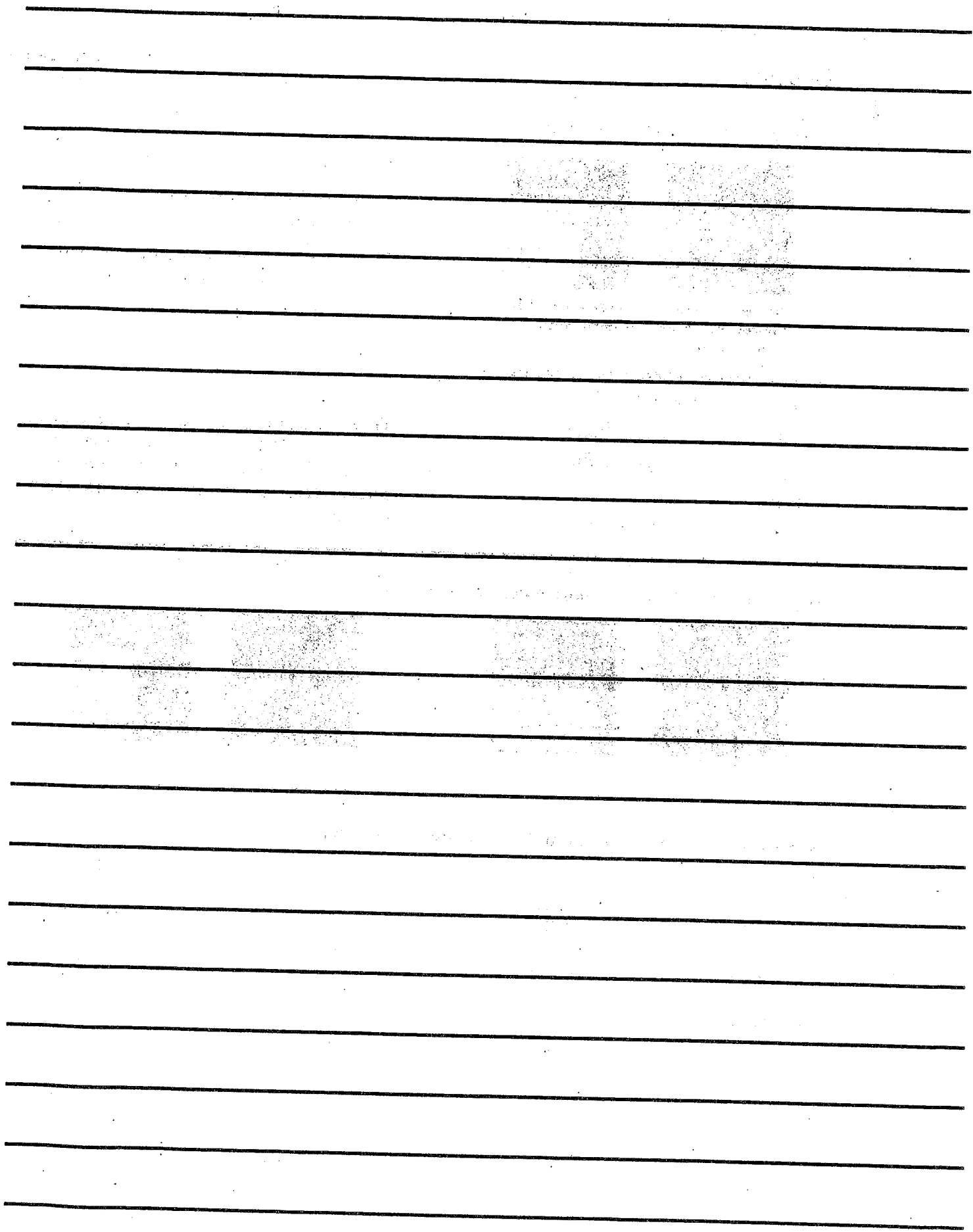
- |                 |                  |                 |
|-----------------|------------------|-----------------|
| 7. 6.457 _____  | 8. 15.0886 _____ | 9. 0.1235 _____ |
| 10. 1.036 _____ | 11. 25.671 _____ | 12. 6.390 _____ |

Estimate each sum or difference.

- |                          |                          |                            |
|--------------------------|--------------------------|----------------------------|
| 13. $\$2.98$<br>$+ 7.22$ | 14. $\$5.33$<br>$+ 2.91$ | 15. $\$10.02$<br>$- 6.89$  |
|                          |                          | 16. $\$15.84$<br>$+ 37.12$ |

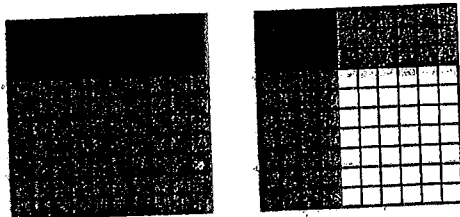
Use compatible numbers to estimate.

- |                            |                             |                         |
|----------------------------|-----------------------------|-------------------------|
| 17. $7.21 \div 3$<br>_____ | 18. $31.74 \div 5$<br>_____ | 19. $522 + 81$<br>_____ |
| 20. $908 - 445$<br>_____   | 21. $477 + 78$<br>_____     | 22. $73 + 229$<br>_____ |



# Review 7

Multiply  $0.3 \times 1.4$ . This drawing can help you find  $0.3 \times 1.4$ .



Each small square is 1 hundredth or 0.01.  
Each column or row is 10 hundredths or 1 tenth or 0.1.

- ① Shade 3 rows across to represent 0.3.
- ② Shade 14 columns down to represent 1.4.
- ③ The area where the shading overlaps is 42 hundredths or 0.42.

$$0.3 \times 1.4 = 0.42$$

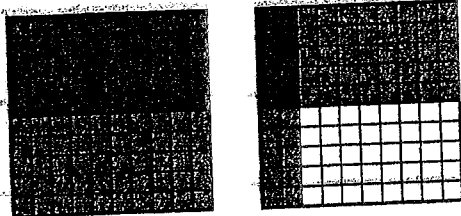
Compare the result from the model to the result of multiplying the factors.

$$\begin{array}{r} 0.3 \quad \leftarrow 1 \text{ decimal place} \\ \times 1.4 \quad \leftarrow +1 \text{ decimal place} \\ \hline 12 \\ + 030 \\ \hline 0.42 \quad \leftarrow 2 \text{ decimal places} \end{array}$$

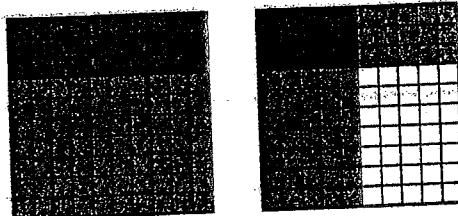
When multiplying decimals, first multiply the factors as though they are whole numbers. Then add the number of decimal places in each factor to find the number of decimal places in the product.

Write a multiplication statement to describe each model.

1.



2.



For each product place the decimal point in the correct place.

3. 
$$\begin{array}{r} 0.9 \\ \times 2.8 \\ \hline 252 \end{array}$$

4. 
$$\begin{array}{r} 3.1 \\ \times 77 \\ \hline 2387 \end{array}$$

5. 
$$\begin{array}{r} 6.22 \\ \times 8 \\ \hline 4976 \end{array}$$

6. 
$$\begin{array}{r} 19.6 \\ \times 2.03 \\ \hline 39788 \end{array}$$

Find each product.

7. 
$$\begin{array}{r} 1.6 \\ \times 3.7 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 8.12 \\ \times 59 \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 12.3 \\ \times 6.1 \\ \hline \end{array}$$

10. 
$$\begin{array}{r} 5.9 \\ \times 1.2 \\ \hline \end{array}$$

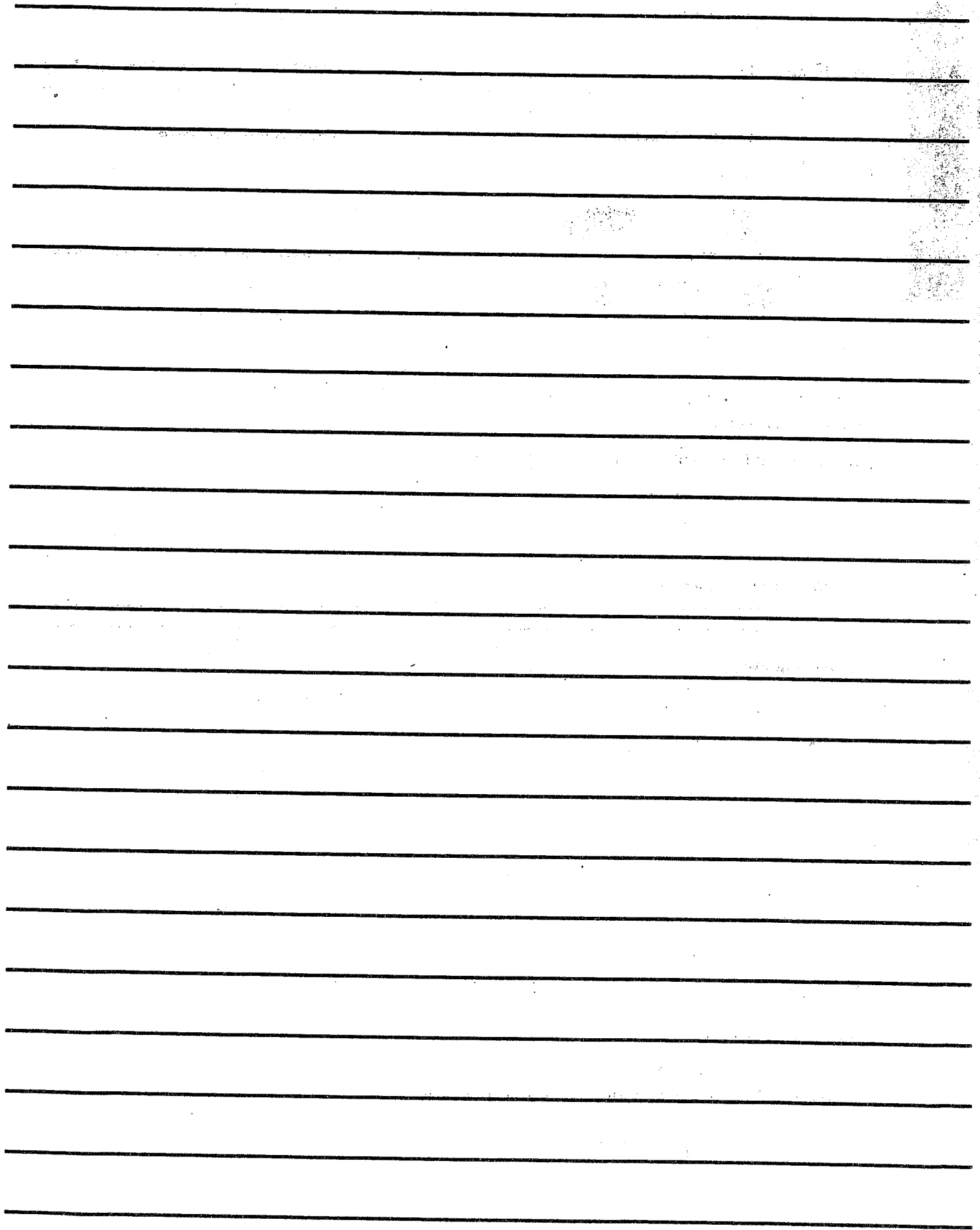
11. 
$$\begin{array}{r} 23.4 \\ \times 5.2 \\ \hline \end{array}$$

12. 
$$\begin{array}{r} 4.8 \\ \times 42 \\ \hline \end{array}$$

13. 
$$\begin{array}{r} 9.2 \\ \times 12.4 \\ \hline \end{array}$$

14. 
$$\begin{array}{r} 120. \\ \times 7.6 \\ \hline \end{array}$$

15. 
$$\begin{array}{r} 3.15 \\ \times 2.3 \\ \hline \end{array}$$

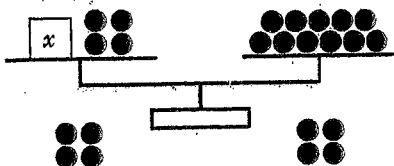


# Review 16

## Solving Addition and Subtraction Equations

### Addition Equations

There are 4 more than needed to fill the  $x$  box.



$$x + 4 = 11$$

To *solve* this equation, find the value of  $x$  that makes the scales balance.

Since 4 is added to  $x$ , subtract 4 from both sides.

$$\begin{aligned} x + 4 &= 11 \\ x + 4 - 4 &= 11 - 4 \\ x &= 7 \end{aligned}$$

The *solution* to the equation is  $x = 7$ .

### Subtraction Equations

$$r - 3 = 9$$

To *solve* this equation, find the value of  $r$ .

Since 3 is subtracted from  $r$ , add 3 to both sides.

$$\begin{aligned} r - 3 &= 9 \\ r - 3 + 3 &= 9 + 3 \\ r &= 12 \end{aligned}$$

The *solution* to the equation is  $r = 12$ .

Solve each equation.

1.  $a + 15 = 31$

$$a + 15 - \underline{\hspace{1cm}} = 31 - \underline{\hspace{1cm}}$$

$$a = \underline{\hspace{1cm}}$$

2.  $5 = x - 20$

$$5 + \underline{\hspace{1cm}} = x - 20 + \underline{\hspace{1cm}}$$

$$\underline{\hspace{1cm}} = x$$

3.  $19 + t = 51$

\_\_\_\_\_

4.  $p - 11 = 12$

\_\_\_\_\_

5.  $60 = n + 30$

\_\_\_\_\_

6.  $71 = b - 29$

\_\_\_\_\_

7.  $86 + m = 107$

\_\_\_\_\_

8.  $w + 349 = 761$

\_\_\_\_\_

9.  $50 - y = 30$

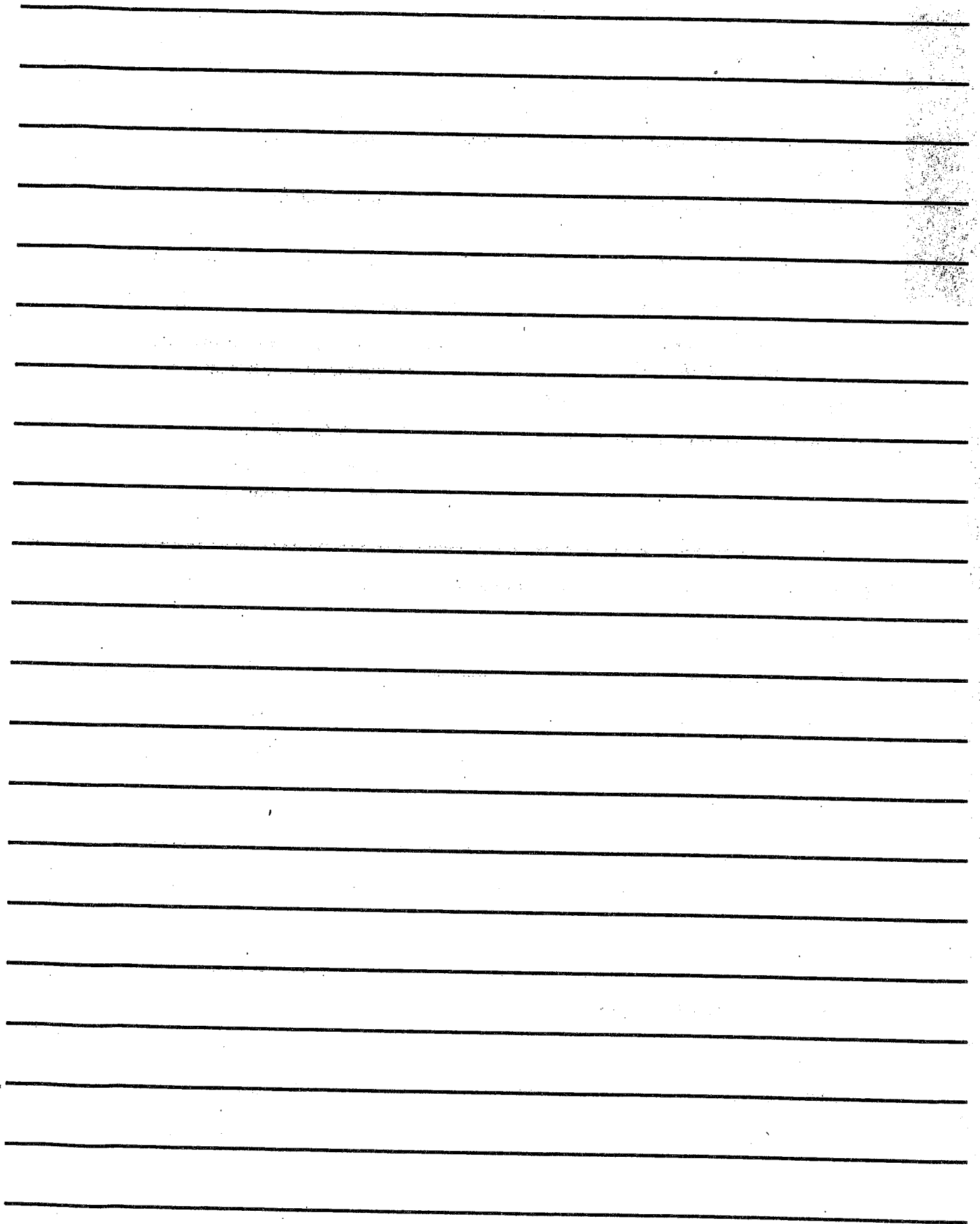
\_\_\_\_\_

10.  $d - 125 = 75$

\_\_\_\_\_

11. A car dealer purchased a car for \$2,000 and then sold it for \$3,200. Write and solve an equation to find the profit.

\_\_\_\_\_



# Review 22

## Greatest Common Factor

You can find the *greatest common factor (GCF)* of 12 and 18 using a division ladder, factor trees, or by listing the factors. Two of these methods are shown.

- ① List the factors of 12 and 18.

12: 1, 2, 3, 4, 6, 12

18: 1, 2, 3, 6, 9, 18

- ② Find the common factors.

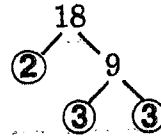
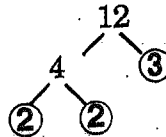
12: ①, ②, ③, 4, ⑥, 12

18: ①, ②, ③, ⑥, 9, 18

The common factors are 1, 2, 3, and 6.

- ③ Name the greatest common factor: 6.

- ① Draw factor trees.



- ② Write each prime factorization. Identify common factors.

12: ② × 2 × ③

18: ② × ③ × 3

- ③ Multiply the common factors.  $2 \times 3 = 6$ .  
The GCF of 12 and 18 is 6.

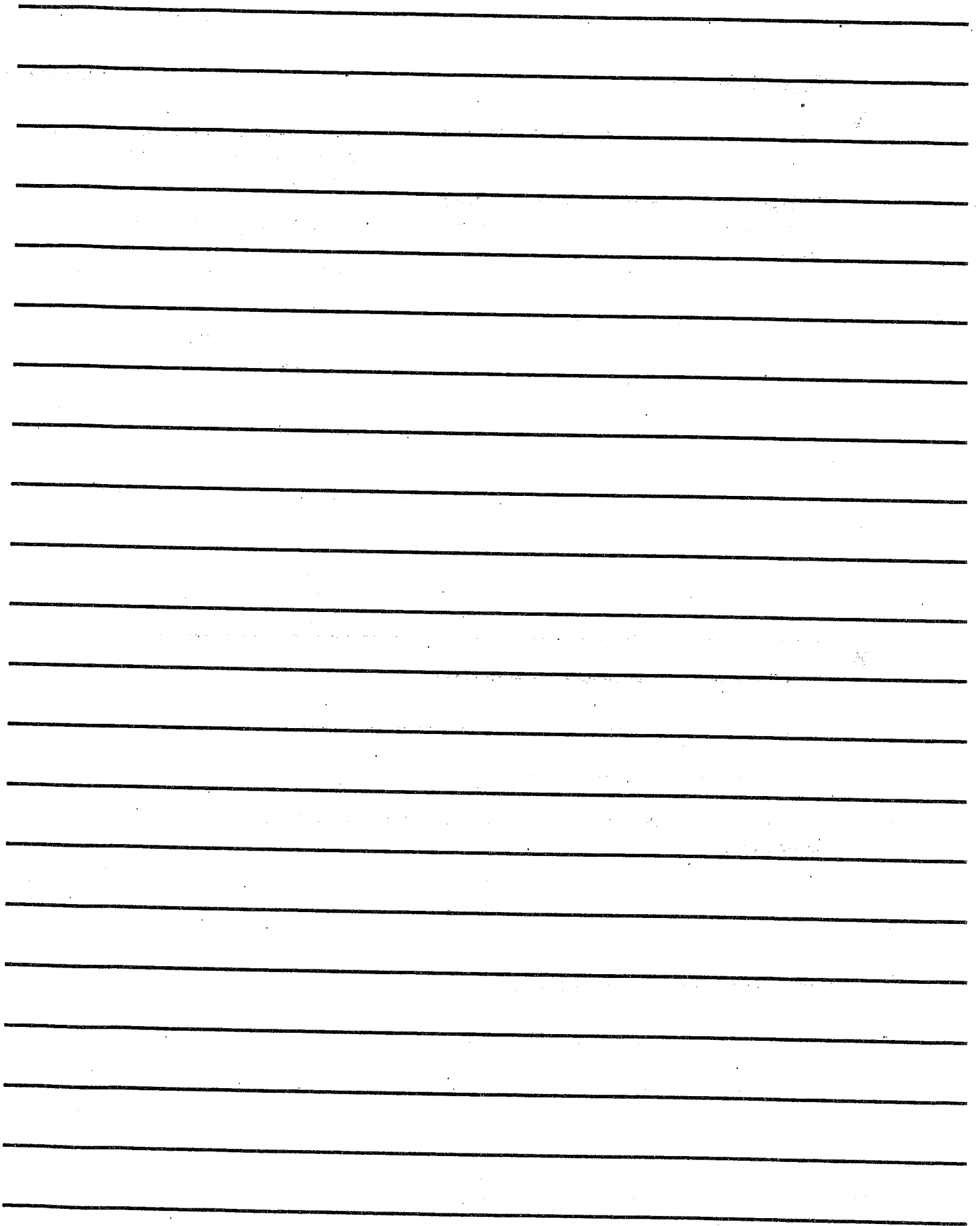
List the factors to find the GCF of each set of numbers.

- |              |              |              |
|--------------|--------------|--------------|
| 1. 10: _____ | 2. 14: _____ | 3. 9: _____  |
| 15: _____    | 21: _____    | 21: _____    |
| GCF: _____   | GCF: _____   | GCF: _____   |
| 4. 12: _____ | 5. 15: _____ | 6. 15: _____ |
| 13: _____    | 25: _____    | 18: _____    |
| GCF: _____   | GCF: _____   | GCF: _____   |
| 7. 36: _____ | 8. 24: _____ |              |
| 48: _____    | 30: _____    |              |
| GCF: _____   | GCF: _____   |              |

Find the GCF of each set of numbers.

- |                  |                  |                   |
|------------------|------------------|-------------------|
| 9. 21, 60 _____  | 10. 15, 45 _____ | 11. 32, 40 _____  |
| 12. 54, 60 _____ | 13. 20, 50 _____ | 14. 21, 63 _____  |
| 15. 36, 40 _____ | 16. 48, 72 _____ | 17. 90, 150 _____ |





# Review 23

## Equivalent Fractions

Equivalent fractions are fractions that name the same amount.

To find equivalent fractions, multiply or divide the numerator and denominator by the same number.

$$\frac{2}{5} = \frac{4}{10}$$

(Diagram: A curved arrow above the fraction points from 2 to 4 with "x 2" written above it. A curved arrow below the fraction points from 5 to 10 with "x 2" written below it.)

$$\frac{4}{10} = \frac{2}{5}$$

(Diagram: A curved arrow above the fraction points from 4 to 2 with "+ 2" written above it. A curved arrow below the fraction points from 10 to 5 with "+ 2" written below it.)

So,  $\frac{2}{5} = \frac{4}{10}$ .

To write a fraction in *simplest form*, divide the numerator and denominator by their greatest common factor.

Example: Write  $\frac{8}{12}$  in simplest form.

- ① Find the greatest common factor.

8: 1, 2, 4, 8

12: 1, 2, 3, 4, 6, 12

The GCF is 4.

- ② Divide the numerator and denominator by the GCF.

$$\frac{8}{12} = \frac{2}{3}$$

(Diagram: A curved arrow above the fraction points from 8 to 2 with "+ 4" written above it. A curved arrow below the fraction points from 12 to 3 with "+ 4" written below it.)

$\frac{8}{12}$  in simplest form is  $\frac{2}{3}$ .

Write two fractions equivalent to each fraction.

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

2.  $\frac{3}{7}$  \_\_\_\_\_

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

4.  $\frac{3}{11}$  \_\_\_\_\_

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

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

State whether each fraction is in simplest form. If it is not, write it in simplest form.

7.  $\frac{12}{15}$  \_\_\_\_\_

8.  $\frac{8}{15}$  \_\_\_\_\_

9.  $\frac{9}{21}$  \_\_\_\_\_

10.  $\frac{15}{22}$  \_\_\_\_\_

11.  $\frac{14}{30}$  \_\_\_\_\_

12.  $\frac{25}{70}$  \_\_\_\_\_

Write each fraction in simplest form.

13.  $\frac{12}{24}$  \_\_\_\_\_

14.  $\frac{10}{200}$  \_\_\_\_\_

15.  $\frac{56}{64}$  \_\_\_\_\_

16.  $\frac{3}{9}$  \_\_\_\_\_

17.  $\frac{130}{170}$  \_\_\_\_\_

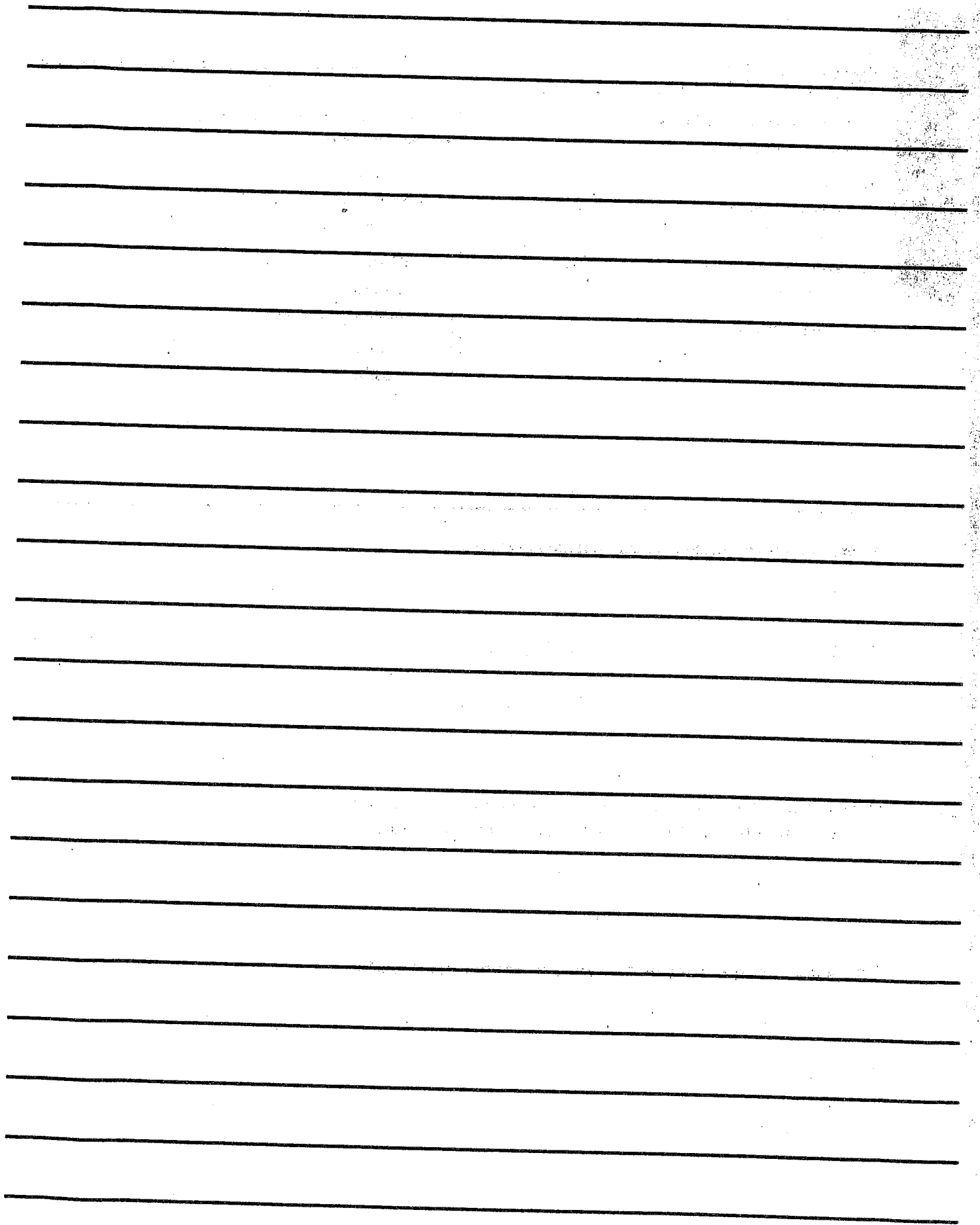
18.  $\frac{12}{16}$  \_\_\_\_\_

19.  $\frac{7}{49}$  \_\_\_\_\_

20.  $\frac{22}{33}$  \_\_\_\_\_

21.  $\frac{30}{225}$  \_\_\_\_\_

22. There are 420 girls out of 1,980 people attending a state fair. In simplest form, what fraction of the people attending are girls?



## Review 24

### Mixed Numbers and Improper Fractions

To write a mixed number as an *improper fraction*:

- ① Multiply the whole number by the denominator.
- ② Add this product to the numerator.
- ③ Write this sum over the denominator.

$$\begin{array}{l} \textcircled{2} \quad \textcircled{3} \\ \textcircled{1} \end{array} \quad \frac{3 \times 5}{8} = \frac{29}{8}$$

To write an improper fraction as a *mixed number*:

- ① Divide the numerator by the denominator.  $\frac{20}{8} = 2$  remainder 4
- ② Write the remainder over the denominator.  $= 2\frac{4}{8}$
- ③ Simplify, if possible.  $= 2\frac{1}{2}$

$$\frac{20}{8} = 2\frac{1}{2}$$

Write each mixed number as an improper fraction.

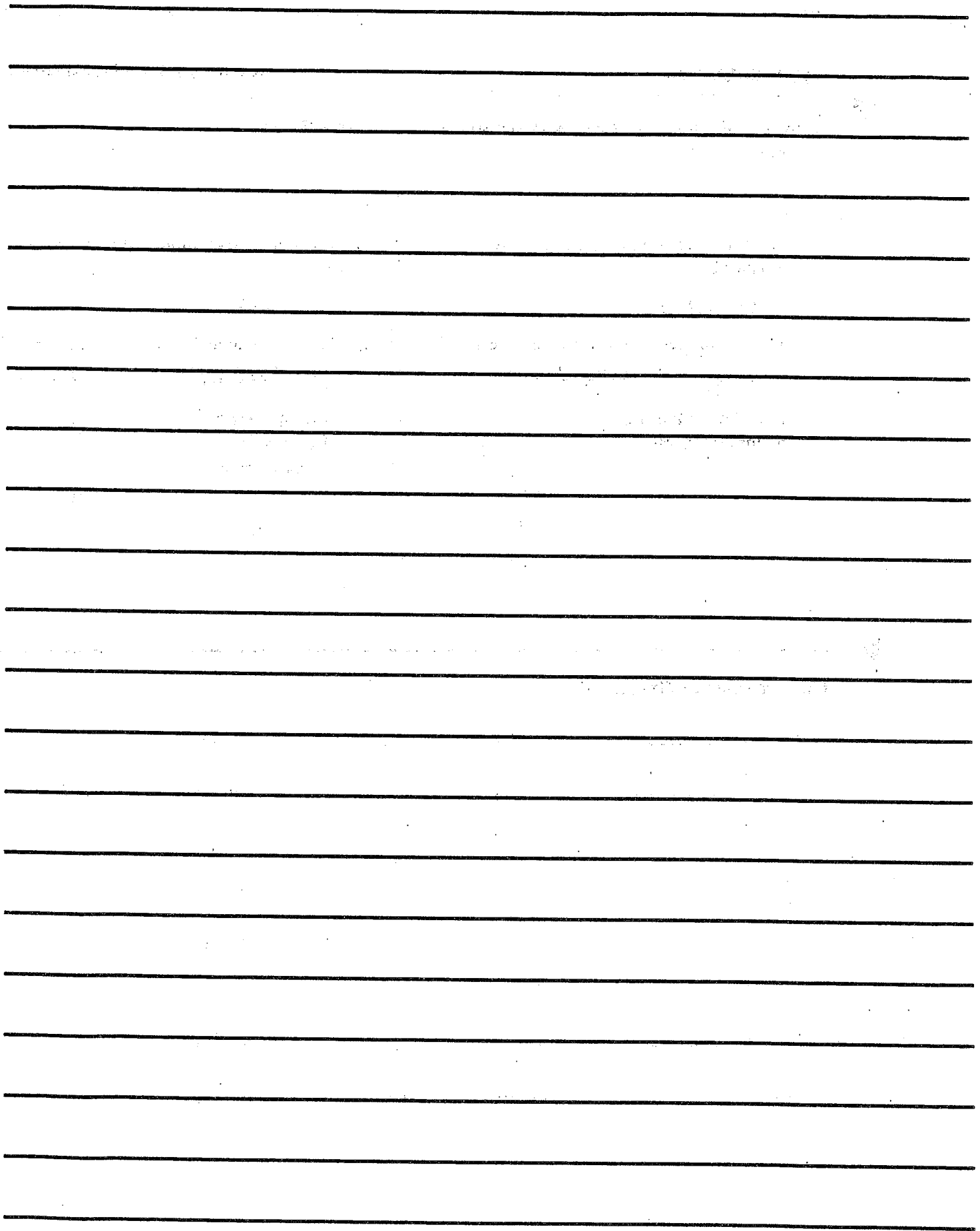
- |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| 1. $2\frac{2}{7}$ _____  | 2. $5\frac{3}{4}$ _____  | 3. $6\frac{1}{2}$ _____  |
| 4. $6\frac{5}{8}$ _____  | 5. $3\frac{4}{10}$ _____ | 6. $4\frac{3}{5}$ _____  |
| 7. $9\frac{1}{3}$ _____  | 8. $4\frac{4}{5}$ _____  | 9. $1\frac{7}{8}$ _____  |
| 10. $3\frac{3}{8}$ _____ | 11. $2\frac{3}{7}$ _____ | 12. $8\frac{1}{6}$ _____ |

On a separate sheet of paper, draw a model of a 4-inch ruler marked off in eighths. Find and label each measurement on your ruler.

- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| 13. $3\frac{5}{8}$ | 14. $2\frac{6}{8}$ | 15. $3\frac{1}{2}$ |
| 16. $1\frac{3}{4}$ | 17. $2\frac{1}{2}$ | 18. $3\frac{1}{4}$ |

Write each improper fraction as a mixed number in simplest form.

- |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| 19. $\frac{9}{8}$ _____  | 20. $\frac{7}{2}$ _____  | 21. $\frac{12}{5}$ _____ |
| 22. $\frac{8}{3}$ _____  | 23. $\frac{14}{8}$ _____ | 24. $\frac{6}{5}$ _____  |
| 25. $\frac{20}{3}$ _____ | 26. $\frac{17}{5}$ _____ | 27. $\frac{18}{4}$ _____ |
| 28. $\frac{9}{5}$ _____  | 29. $\frac{29}{8}$ _____ | 30. $\frac{24}{9}$ _____ |



# Review 31

## Fractions With Unlike Denominators

To add or subtract fractions with unlike denominators, you can use equivalent fractions.

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

- ① Find the least common denominator of 6 and 2.

The LCD is 6.

- ② Write equivalent fractions using the LCD.

$$\frac{5}{6} = \frac{5}{6} \quad \frac{1}{2} = \frac{1 \times 3}{2 \times 3} = \frac{3}{6}$$

- ③ Add. Write the sum in simplest form.

$$\begin{aligned} \frac{5}{6} + \frac{1}{2} &= \frac{5}{6} + \frac{3}{6} \\ &= \frac{5+3}{6} \\ &= \frac{8}{6} \\ &= \frac{4}{3} \\ &= 1\frac{1}{3} \end{aligned}$$

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

Find  $\frac{4}{5} - \frac{1}{3}$ .

- ① Find the least common denominator of 5 and 3.

The LCD is 15.

- ② Write equivalent fractions using the LCD.

$$\frac{4}{5} = \frac{4 \times 3}{5 \times 3} = \frac{12}{15} \quad \frac{1}{3} = \frac{1 \times 5}{3 \times 5} = \frac{5}{15}$$

- ③ Subtract. Write the difference in simplest form.

$$\begin{aligned} \frac{4}{5} - \frac{1}{3} &= \frac{12}{15} - \frac{5}{15} \\ &= \frac{12-5}{15} \\ &= \frac{7}{15} \end{aligned}$$

$$\frac{4}{5} - \frac{1}{3} = \frac{7}{15}$$

Find each sum or difference.

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

2.  $\frac{11}{16} - \frac{5}{16}$  \_\_\_\_\_

3.  $\frac{1}{6} + \frac{1}{3}$  \_\_\_\_\_

4.  $\frac{7}{8} - \frac{1}{2}$  \_\_\_\_\_

5.  $\frac{9}{10} + \frac{1}{2}$  \_\_\_\_\_

6.  $\frac{2}{3} + \frac{5}{9}$  \_\_\_\_\_

7.  $\frac{1}{2} + \frac{7}{10}$  \_\_\_\_\_

8.  $\frac{3}{4} - \frac{5}{12}$  \_\_\_\_\_

9.  $\frac{5}{8} + \frac{1}{4}$  \_\_\_\_\_

10.  $\frac{15}{16} - \frac{1}{4}$  \_\_\_\_\_

11.  $\frac{7}{12} - \frac{1}{3}$  \_\_\_\_\_

12.  $\frac{5}{6} + \frac{1}{3}$  \_\_\_\_\_

13.  $\frac{7}{8} - \frac{1}{4}$  \_\_\_\_\_

14.  $\frac{3}{5} + \frac{1}{6}$  \_\_\_\_\_

15.  $\frac{1}{12} + \frac{1}{10}$  \_\_\_\_\_

16.  $\frac{7}{8} - \frac{3}{10}$  \_\_\_\_\_

17.  $\frac{2}{6} + \frac{3}{4}$  \_\_\_\_\_

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

19.  $\frac{5}{8} + \frac{2}{3}$  \_\_\_\_\_

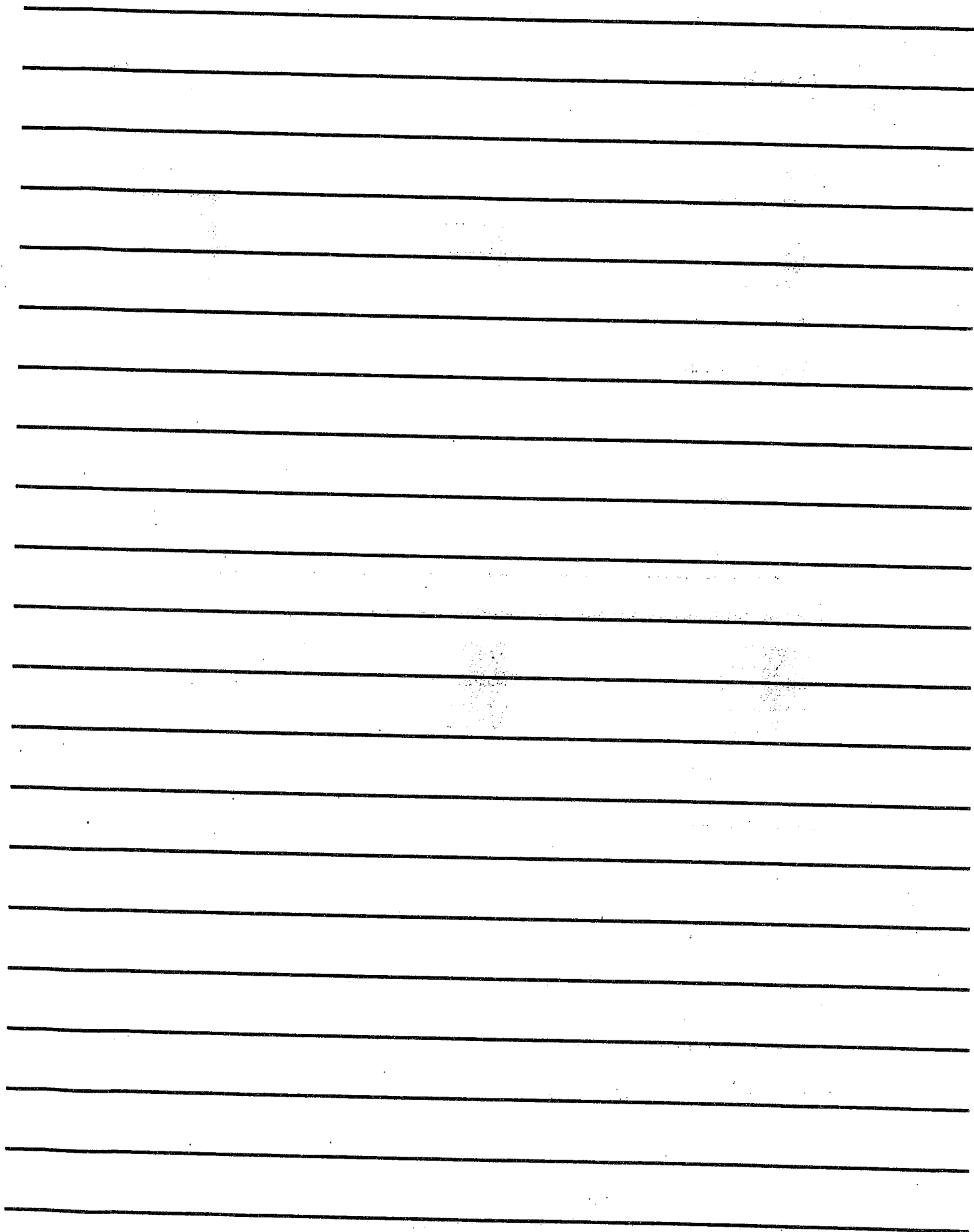
20.  $\frac{3}{5} - \frac{1}{2}$  \_\_\_\_\_

21.  $\frac{1}{8} + \frac{1}{5}$  \_\_\_\_\_

22.  $\frac{7}{10} - \frac{3}{5}$  \_\_\_\_\_

23.  $\frac{9}{10} - \frac{1}{2}$  \_\_\_\_\_

24.  $\frac{1}{10} + \frac{4}{5}$  \_\_\_\_\_

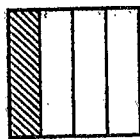


# Review 37

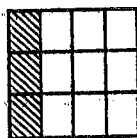
## Multiplying Fractions

You can model  $\frac{2}{3}$  of  $\frac{1}{4}$ .

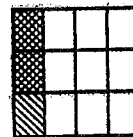
① Show  $\frac{1}{4}$ .



② Divide into thirds.



③ Shade  $\frac{2}{3}$  of the  $\frac{1}{4}$ .

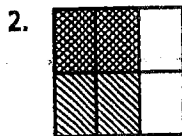
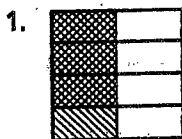


$$\frac{2}{3} \text{ of } \frac{1}{4} = \frac{2}{3} \times \frac{1}{4} = \frac{1}{6}$$

Or you can use multiplication.

$$\begin{aligned} \frac{2}{3} \text{ of } \frac{1}{4} &= \frac{2}{3} \times \frac{1}{4} \\ &= \frac{2 \times 1}{3 \times 4} \\ &= \frac{2}{12} \\ &= \frac{1}{6} \end{aligned}$$

Write the multiplication problem each model represents.



Find each product.

3.  $\frac{1}{9}$  of  $\frac{2}{3}$

\_\_\_\_\_

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

\_\_\_\_\_

5.  $\frac{5}{8} \cdot 6$

\_\_\_\_\_

6.  $\frac{3}{4} \cdot \frac{4}{7}$

\_\_\_\_\_

7.  $\frac{7}{10}$  of  $\frac{1}{3}$

\_\_\_\_\_

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

\_\_\_\_\_

9.  $\frac{3}{8}$  of  $\frac{7}{10}$

\_\_\_\_\_

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

\_\_\_\_\_

11.  $\frac{2}{9}$  of 8

\_\_\_\_\_

12.  $\frac{1}{3}$  of 2

\_\_\_\_\_

13.  $\frac{5}{9}$  of 4

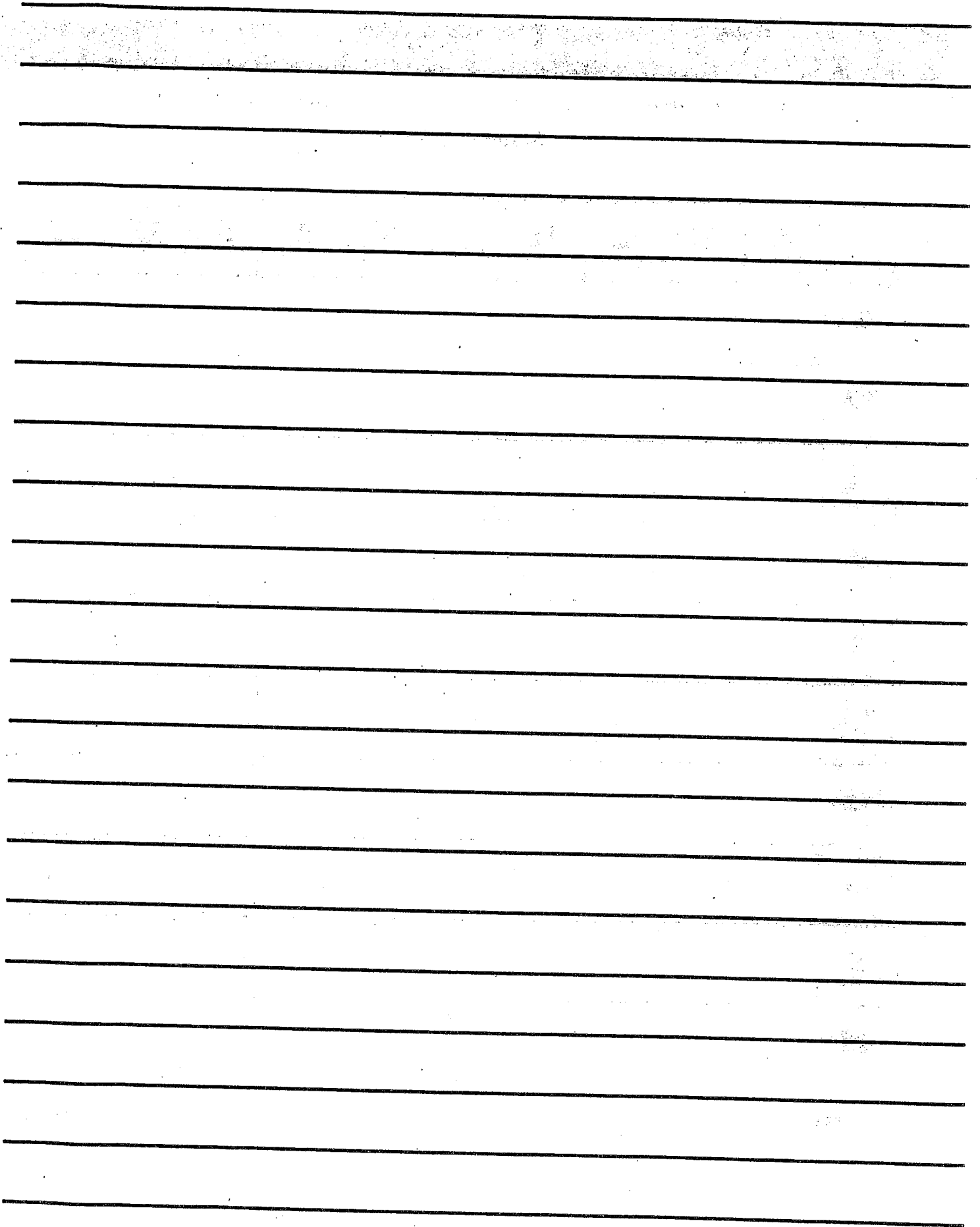
\_\_\_\_\_

14.  $\frac{3}{4} \cdot \frac{2}{5}$

\_\_\_\_\_

15. Every day you eat  $\frac{1}{4}$  cup of cereal. Your brother eats 5 times as much. How many cups of cereal does your brother eat? \_\_\_\_\_





# Five Minute Multiplying Frenzy (G)

Write the product of the column and row numbers in each space.

(Range 5 to 15)

$\times$	8	14	13	11	6	10	9	5	15	12
7										
10										
11										
9										
6										
13										
12										
14										
5										
15										

Time: \_\_\_\_\_

/100