



MATHEMATICS 504

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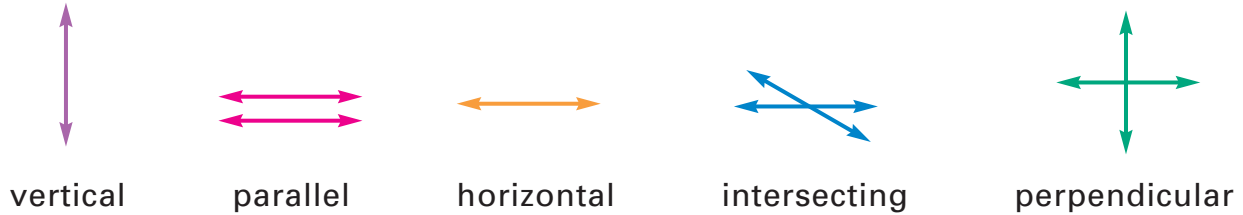
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I. Part One

Objectives

To learn how lines relate to each other
To learn more about equivalent fractions and multiplication
To learn about Roman numerals

▲ Lines may be defined ...
by the way they are drawn or by their relationship to each other.



Vertical lines are straight up and down.

Parallel lines are the same distance apart along their entire length.

Horizontal lines are parallel to the horizon.

Intersecting lines cross each other.

Perpendicular lines form square corners where they meet.

1.1 Select lines to describe ...

- | | | | |
|--|-------|--------------------|-------|
| a. railroad tracks | _____ | b. street corner | _____ |
| c. telephone pole | _____ | d. letter X | _____ |
| e. corners of a window | _____ | f. legs on a table | _____ |
| g. line on a map from North America to South America | _____ | | |
| h. two streets both going east and west | _____ | | |
| i. wires attached to a telephone pole | _____ | | |
| j. layers of brick on a brick fence | _____ | | |



1.2 Practice drawing lines. Use your ruler.

perpendicular horizontal parallel intersecting vertical

▲ There may be a zero in the multiplier in multiplication problems.

$$\begin{array}{r} 5,371 \\ \times 40 \\ \hline 0\ 000 \\ 214\ 840 \\ \hline 214,840 \end{array}$$

Multiply 5,371 by 0 ones. $5,371 \times 0 = 0000$
Write a zero place holder.
Multiply 5,371 by 4 tens. $5,371 \times 4 = 21,484$
Add.

1.3 Multiply.

$$\begin{array}{r} 3,467 \\ \times 50 \\ \hline \end{array}$$

$$\begin{array}{r} 2,931 \\ \times 60 \\ \hline \end{array}$$

$$\begin{array}{r} 9,263 \\ \times 80 \\ \hline \end{array}$$

$$\begin{array}{r} 4,830 \\ \times 20 \\ \hline \end{array}$$

1.4 Write factors for prime numbers.

3 _____, _____

7 _____, _____

13 _____, _____

1.5 Write factors for composite numbers.

6 _____, _____, _____, _____

8 _____, _____, _____, _____

9 _____, _____, _____

12 _____, _____, _____, _____, _____

15 _____, _____, _____, _____

16 _____, _____, _____, _____, _____

24 _____, _____, _____, _____, _____, _____, _____, _____

1.6 Reduce proper fractions to lowest terms.

Divide the numerator and denominator by the greatest common factor.

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

$$\frac{6}{8} =$$

$$\frac{9}{12} =$$

$$\frac{9}{15} =$$

$$\frac{8}{16} =$$

$$\frac{6}{24} =$$

1.7 Simplify improper fractions.

Divide the denominator into the numerator.

$$\frac{14}{9} =$$

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

$$\frac{15}{15} =$$

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

$$\frac{20}{13} =$$

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

▲ We write equivalent fractions when we ...

simplify a fraction or reduce it to lowest terms.

find the lowest common denominator and write the new numerator.



1.8 Follow the steps to find a common denominator for $\frac{2}{6}$ and $\frac{3}{8}$.

a. Write five multiples of 6. _____

Write five multiples of 8. _____

Write the smallest multiple that they have in common. _____

Write the common denominator for the problem. _____

$$\begin{array}{r} \frac{2}{6} \\ + \frac{3}{8} \\ \hline \end{array}$$

?

b. Change $\frac{2}{6}$ to an equivalent fraction.
Follow the steps. Divide. Multiply. Write.

Divide _____ into _____. The answer is _____.

Multiply _____ x _____. The answer is _____.

Write _____ as the new numerator.

$$\begin{array}{r} \frac{2}{6} = \frac{8}{24} \\ + \frac{3}{8} = \frac{9}{24} \\ \hline \frac{17}{24} \end{array}$$

c. Change $\frac{3}{8}$ to an equivalent fraction.
Follow the steps. Divide. Multiply. Write.

Divide _____ into _____. The answer is _____.

Multiply _____ x _____. The answer is _____.

Write _____ as the new numerator.

1.9 Follow the steps. Find equivalent fractions. Add or subtract.

$\frac{1}{6} =$	$\frac{3}{8} =$	$\frac{5}{6} =$	$\frac{4}{9} =$
$+ \frac{2}{9} =$	$+ \frac{5}{12} =$	$- \frac{4}{15} =$	$- \frac{5}{12} =$
_____	_____	_____	_____

Answers may need to be simplified or reduced to lowest terms.

$$\begin{array}{r} \frac{5}{8} = \frac{15}{24} \\ + \frac{2}{3} = \frac{16}{24} \\ \hline \frac{31}{24} = 1\frac{7}{24} \end{array}$$

Find the common denominator.
Write the new numerators.
Add or subtract.
Simplify or reduce to lowest terms.

1.10 Add or subtract.
Simplify answers or reduce to lowest terms.

$$\begin{array}{r} \frac{2}{3} = \\ + \frac{3}{4} = \\ \hline \end{array} \quad \begin{array}{r} \frac{5}{8} = \\ + \frac{6}{10} = \\ \hline \end{array} \quad \begin{array}{r} \frac{1}{4} = \\ + \frac{5}{6} = \\ \hline \end{array} \quad \begin{array}{r} \frac{1}{3} = \\ + \frac{4}{5} = \\ \hline \end{array}$$

$$\begin{array}{r} \frac{1}{2} = \\ - \frac{1}{3} = \\ \hline \end{array} \quad \begin{array}{r} \frac{3}{4} = \\ - \frac{1}{5} = \\ \hline \end{array} \quad \begin{array}{r} \frac{2}{3} = \\ - \frac{3}{8} = \\ \hline \end{array} \quad \begin{array}{r} \frac{1}{2} = \\ - \frac{2}{5} = \\ \hline \end{array}$$

1.11 Write the answer.

- Jolyn had three feet of ribbon. She gave her sister fourteen inches of the ribbon. How much ribbon does she have now? _____
- Ben had planned to meet his friend Joe at 1:30 P.M. The clock showed 10:15 A.M. How much time before Ben is to meet Joe? _____
- Katie was boiling eggs for egg salad. What temperature did she need to heat the water so that she could boil the eggs? _____
- Mark was measuring the water in a pitcher. He filled 10 cups. How many quarts did Mark have? How many pints left over? quarts _____ pints _____

