

Lesson 5.9 - Angle Relationships & Parallel Lines

Learning Target - I will find angle measures using angle relationships formed by parallel lines.

$$1. m\angle a = \underline{120^\circ}$$

$$2. m\angle x = \underline{45^\circ} \quad m\angle y = \underline{135^\circ} \quad m\angle z = \underline{45^\circ}$$

$$3. m\angle p = \underline{20^\circ}$$

$$4. m\angle r = \underline{90^\circ} \quad m\angle s = \underline{60^\circ} \quad m\angle t = \underline{30^\circ}$$

$$5. m\angle h = \underline{65^\circ}$$

$$6. m\angle d = \underline{75^\circ} \quad m\angle e = \underline{105^\circ}$$

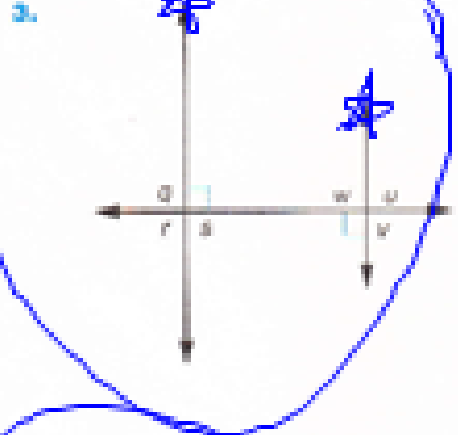
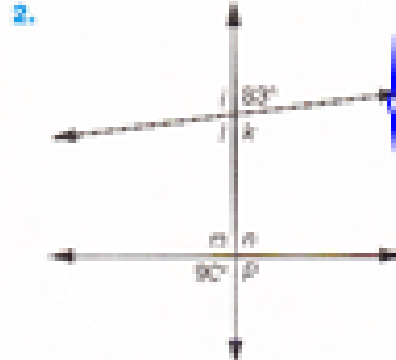
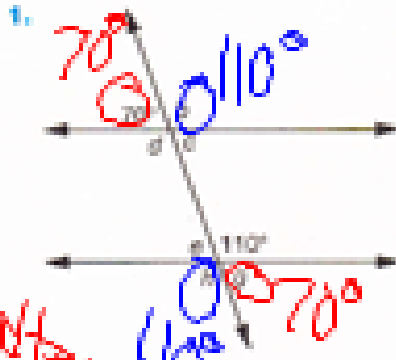
$$m\angle f = \underline{75^\circ}$$

$$m\angle g = \underline{105^\circ}$$

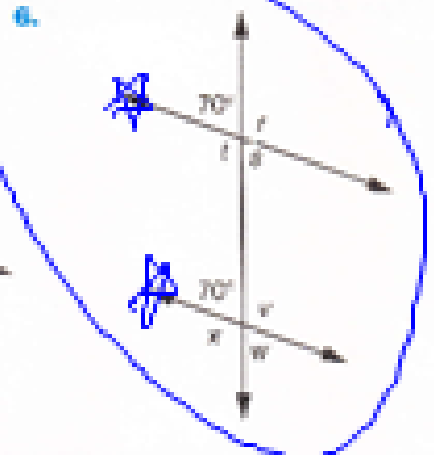
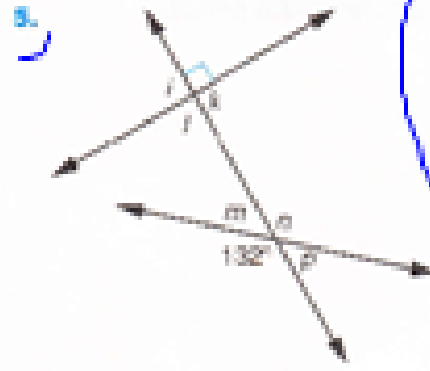
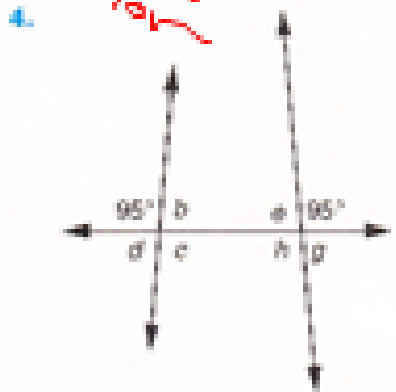
LESSON
5.9

Parallel Lines and Angle Relationships

Without using a protractor, find the degree measure of each angle in Problems 1–6 below. Write the measure inside the angle. Then circle the figures in which 2 of the lines appear to be parallel.

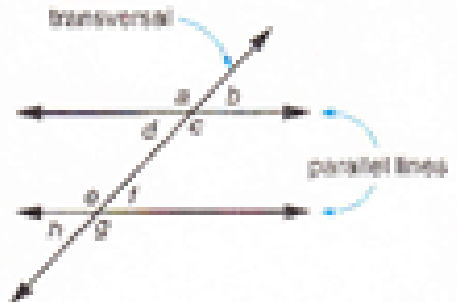
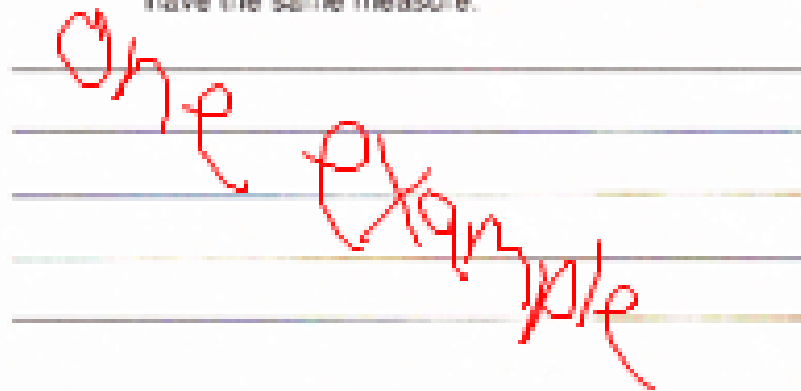


alternate exterior



7. A line that intersects 2 parallel lines is called a transversal. The angles formed by 2 parallel lines and a transversal have special properties. Refer to the picture of parallel lines below to describe one of these properties.

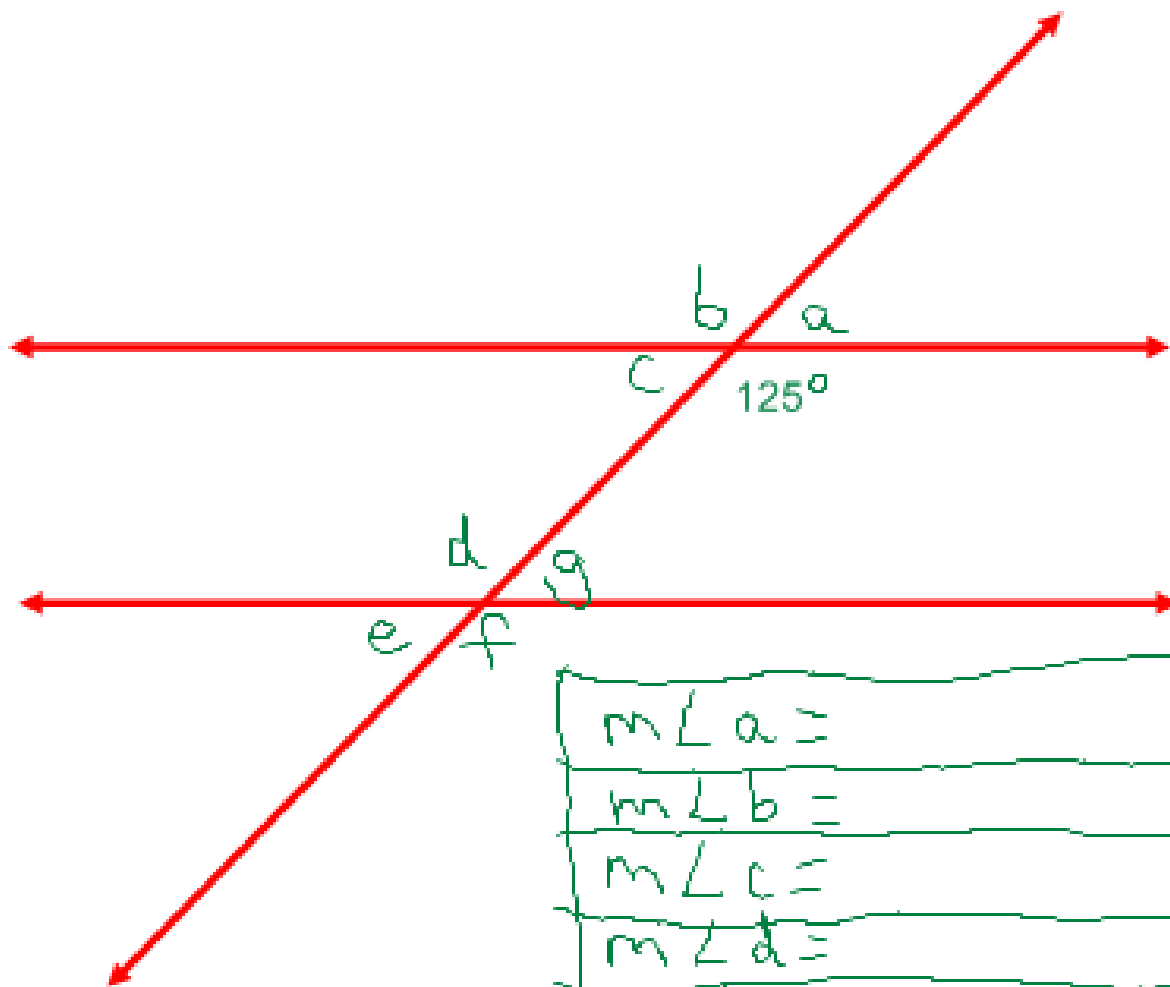
Example: Angles such as $\angle b$ and $\angle f$, which lie on the same side of the transversal, have the same measure.



parallel lines - two lines that do not
|| EVER intersect with each other

Corresponding angles -
alternate interior \angle s -
alternate exterior \angle s -

have
the
same
measure



$m\angle a =$
$m\angle b =$
$m\angle c =$
$m\angle d =$
$m\angle e =$
$m\angle f =$
$m\angle g =$

LESSON
5.9**Working with Parallel Lines**

1. Using only a compass and a straightedge, construct 2 parallel lines. Do this construction without referring to the *Student Reference Book*. (Hint: This construction involves copying an angle.)

2. Draw 2 parallel lines using only a ruler and a pencil.



3. Draw a parallelogram that is not a rectangle, using only a ruler and a pencil.

LESSON
5-9**Calculating Total Price**

A total price is the sum of the price of an item (or subtotal) and the sales tax or tip that is a percentage of that item:

$$\text{Total Price} = \text{Subtotal} + \text{Sales Tax (or Tip)}$$

Two-Step Method	One-Step Method
Subtotal: \$49.75 Sales Tax: 8% Find the total price.	Subtotal: \$49.75 Sales Tax: 8% Find the total price.
Step 1: Find the sales tax in dollars: 8% of \$49.75. $0.08 \times \$49.75 = \3.98	The total price equals 100% of the subtotal plus 8% of the subtotal, so
Step 2: Add the sales tax amount to the subtotal.	Total = 100% + subtotal + 8% + subtotal = 1.08 + subtotal
Subtotal + Sales Tax = Total Price $\$49.75 + \$3.98 = \$53.73$	Find 108% of \$49.75. $108\% \text{ of } \$49.75 = 1.08 \times \$49.75 = \$53.73$
The total price is \$53.73.	The total price is \$53.73.

Calculator

Spiral

Use either method to find the total price. Round your answer to the nearest cent, if necessary.

1. Subtotal: \$89.00
Sales Tax: 6%
Total Price: _____

2. Subtotal: \$325.00
Sales Tax: 7%
Total Price: _____

3. Subtotal: \$25.20
Tip: 15%
Total Price: _____

4. Subtotal: \$103.50
Tip: 20%
Total Price: _____

5. Subtotal: \$448.40
Sales Tax: 4.5%
Total Price: _____

6. Subtotal: \$876.00
Sales Tax: 6.25%
Total Price: _____

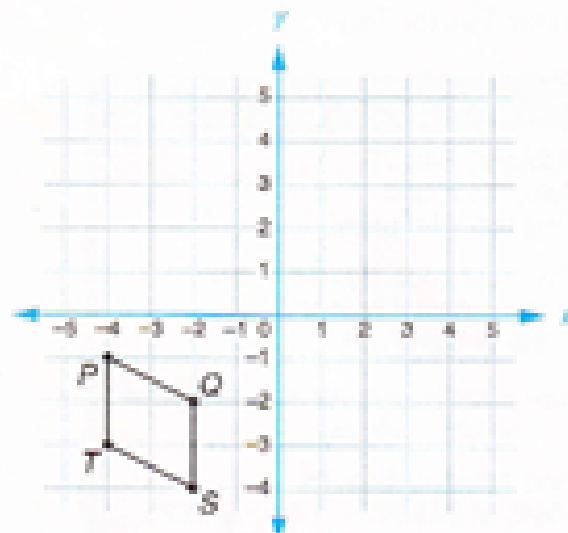
LESSON

5•9

Math Boxes



1. Reflect figure $PQST$ over the x -axis. Then plot and label the vertices of the image that results from that reflection.



$$P = (\underline{\quad}, \underline{\quad}) \quad Q = (\underline{\quad}, \underline{\quad})$$

$$S = (\underline{\quad}, \underline{\quad}) \quad T = (\underline{\quad}, \underline{\quad})$$



2. Use the partial-quotients algorithm to divide the numerator by the denominator. Round the result to the nearest hundredth and rename the result as a percent.

$$\frac{11}{12} = 0.\underline{\quad}\underline{\quad} = \underline{\quad}\underline{\quad}\%$$



3. Choose the best estimate for the product $11\frac{2}{3} \times \frac{1}{2}$.

 12

 11

 6

 3


4. Write a number sentence for each word sentence. Then tell whether the number sentence is true or false.

Word Sentence	Number Sentence	True or False?
If 19 is subtracted from 55, the result is 36.		
78 added to 62 is less than 160.		
45 is 5 times as great as 9.		



Homework

p. 195-198 + S.L. 5.9

p. 196 - only #2

p. 197 - spirals, but can use a calculator