Chapter 3 and 6-4 Review Worksheet

Complete.

1) If the measure of each angle of a triangle is less than 90°, then the

triangle is called _____.

2) If a triangle has no congruent sides, it is called _____.

3) Each angle of an equilateral triangle has measure _____.

4) If the measures of the acute angles of a right triangle are $2x + 4$ and

$3x - 9$, then $x =$ _____

5) The lengths of the sides of a triangle are $2x + 5$, $3x + 10$, and $x + 12$. Find all the values of x that make the triangle isosceles.

6) A nonagon has _____ sides.

7) A regular polygon is both _____ and _____.
(hint: one word describes the sides, the other the angles.)

8) In a regular decagon, the sum of the measures of the exterior angles is

_____ and the measure of each interior angle is _____

9) If the measure of each interior angle of a polygon is 174, then the

measure of each exterior angle is _____ and the polygon has _____sides

Use the given diagram to identify the type of angles (*corresponding, same-side interior, or alternate interior)*, the transversal, and the parallel lines for each pair of angles if they exist. If not, write *none*.

10) m< 1 = m< 8

11) m< 15 + m< 16 = m< 2

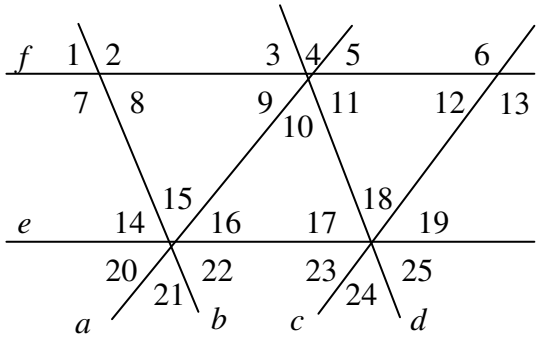
12) m< 10 = m< 18

13) m< 9 + m< 10 = 180 – m< 17

14) m< 9 = m< 16

15) m< 2 + m< 3 = 180°

16) m< 8 = m< 17



Complete each statement with the word *always, sometimes, or never*.

17) Two lines that have no points in common are _____ parallel.

18) If a line is perpendicular to one of two parallel lines, then it is

_____ perpendicular to the other one.

19) If two lines are cut by a transversal and same-side interior angles are

complementary, then the lines are _____ parallel.

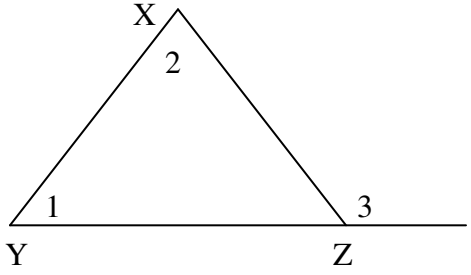
20) An obtuse triangle is _____ a right triangle.

21) In ΔABC, if $\overline{AB}$ is perpendicular to $\overline{BC}$, then $\overline{AC}$ is _____ perpendicular to $\overline{BC}$.

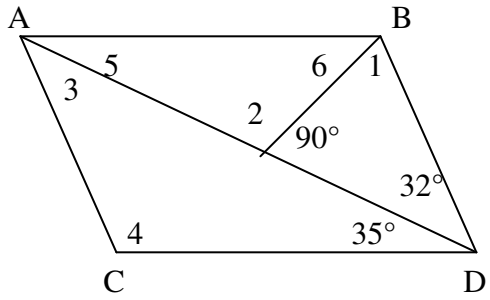
22) As the number of sides of a regular polygon increases, the measure of each exterior angle _____ decreases.

Find the measures of each numbered angle in the following diagrams.

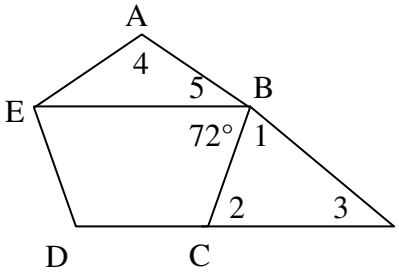
23) ΔXYZ is regular



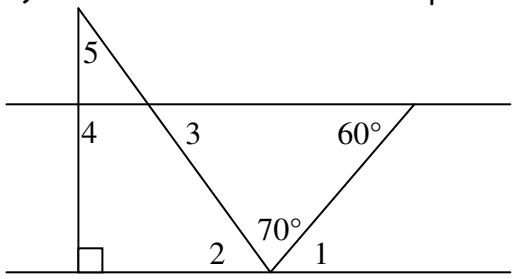
24) AC || BD and AB || CD



25) ABCDE is regular



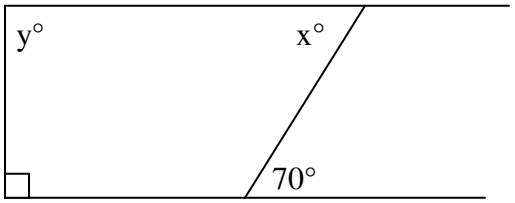
26) the two horizontal lines are parallel



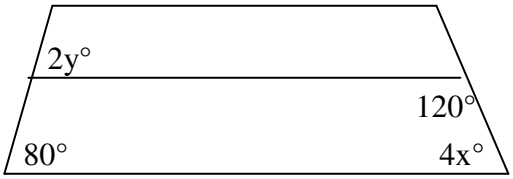
27) The measure of the largest angle of a triangle is twice the measure of the smallest angle and the third angle is 20 less than the largest angle. Find the measure of all three angles.

On the next page, solve for x and y using each diagram.

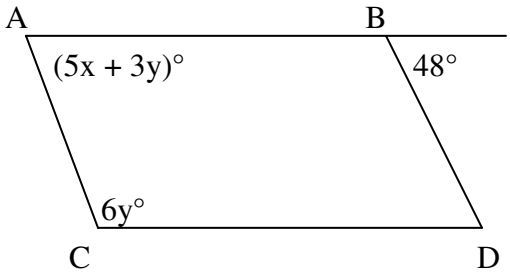
28) the two horizontal lines are parallel



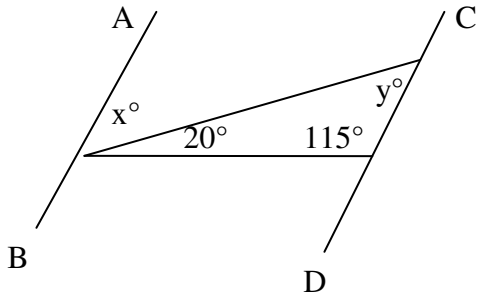
29) all horizontal lines are parallel



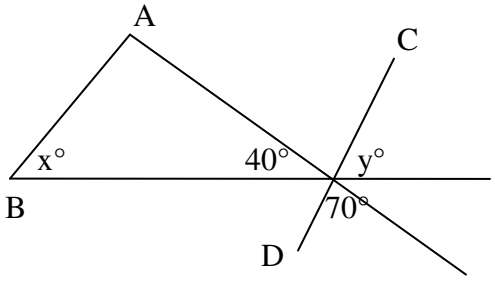
30) AB||CD and AD||BC



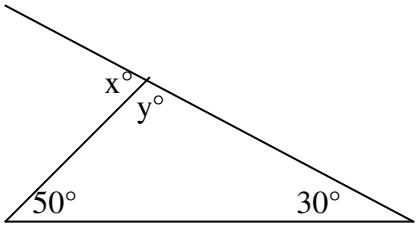
31) AB || CD



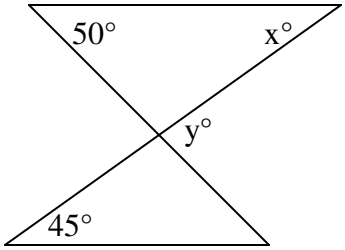
32) AB || CD



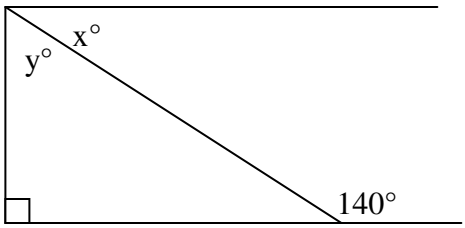
33)



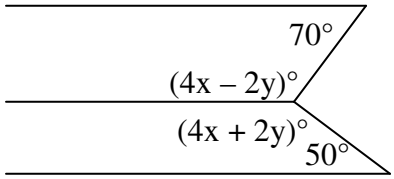
34) the two horizontal lines are parallel



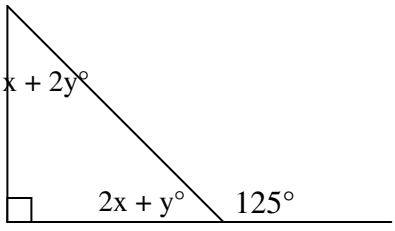
35) the two horizontal lines are parallel



36) all horizontal lines are parallel



37)



Chapter 3 Review Worksheet Answer Key:

1) acute
2) scalene
3) 60°
4) 19
5) x = 1 and 7
6) 9
7) equilateral, equiangular
8) 360°, 144°
9) 6°, 60
10) none
11) corresponding <s; trans = b; f || e
12) alt.int. <s; trans = d; a || c
13) same-side int. <s; trans = d; e || f
14) alt. int. <s; trans = a; f || e
15) same-side int. <s; trans = f; b || d
16) none
17) sometimes (could be skew)
18) sometimes (could be skew)
19) never (must be supplementary)
20) never (would be > 180° total)
21) never (at most one right < in a Δ)
22) always
23) < 1 = < 2 = 60; < 3 = 120
24) <1 = 58;<2 = 90;<3 = 32
<4 = 113; <5 = 35; <6 = 55
25) <1 = < 2 = 72; <3 = 36
< 4 = 108; < 5 = 36
26) <1 = 60; <2 = <3 = 50
< 4 = 90; < 5 = 40
27) smallest = 40°
middle = 60°
largest = 80°
28) x = 70; y = 90
29) x = 15; y = 40
30) x = -3.6; y = 22
31) x = 45; y = 45
32) x = 70; y = 70
33) x = 80; y = 100
34) x = 45; y = 95
35) x = 40; y = 50
36) x = 30; y = 5
37) x = 25; y = 5

Review of lesson 6-4

Is it possible for a triangle to have sides with the length indicated? Write yes or no and **show your work to support your answer**.

1) 21, 25, 40

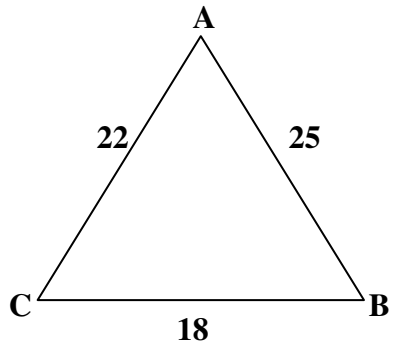
2) 12, 29, 17

The lengths of two sides of a triangle are given. Write the numbers that best complete the statement: The length of the third side must be greater than _____, but less than ____.

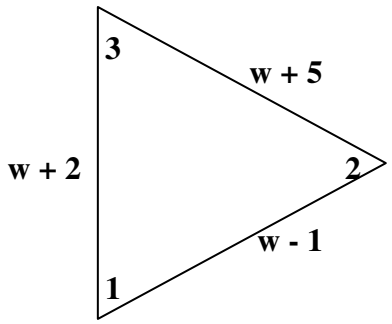
3) 33, 67

Put the angles in order from smallest to largest.

4)

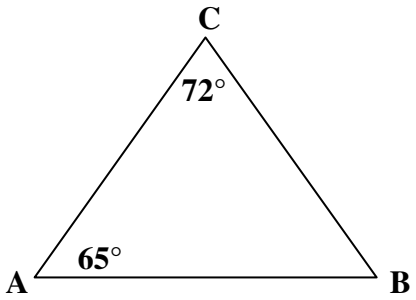


5)

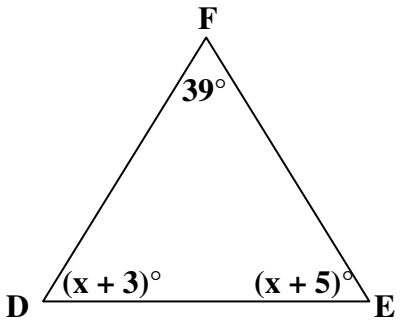


Put the sides in order from smallest to largest.

6)



7)



Answer Key:

1) 21 + 25 > 40 yes

2) 2) 12 + 17 = 29 no

3) 34< x < 100

4) < A, < B, < C

5) < 3, < 2, < 1

6) $\overline{AC}$, $\overline{CB}$, $\overline{AB}$

7) $\overline{DE}$, $\overline{FE}$, $\overline{DF}$