

## Spiral Review

1. Find the distance between  $(5, 7)$  and  $(-1, 2)$ .

$$d = \sqrt{(-1-5)^2 + (2-7)^2}$$

$$= \sqrt{(-6)^2 + (-5)^2}$$

$$* = \sqrt{36 + 25}$$

$$d = \sqrt{61} \approx 7.81 \approx 7.8$$

3. Name the 4 types of angles.

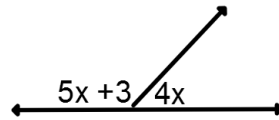
- 1) acute (less than  $90^\circ$ )
- 2) obtuse (greater than  $90^\circ$ )
- 3) straight ( $= 180^\circ$ )
- 4) right ( $= 90^\circ$ )

2. Find the midpoint between  $(9, 3)$  and  $(-6, 2)$ .

$$\left( \frac{9+(-6)}{2}, \frac{3+2}{2} \right)$$

$$\left( \frac{3}{2}, \frac{5}{2} \right)$$

- 4.



linear pair

$$5x + 3 + 4x = 180$$

$$x = 19.7$$

$$\begin{array}{r} 9x + 3 = 180 \\ -3 \quad -3 \\ \hline 9x = 177 \\ \cdot \frac{1}{9} \quad \frac{1}{9} \end{array}$$

## p. 237 4.1 Classifying Triangles

\*\*There are two ways to classify triangles, by sides and angles.

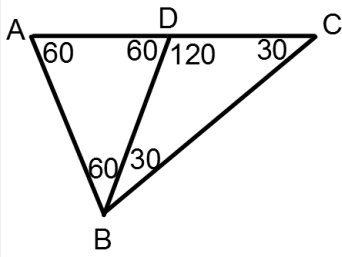
Classify by sides

1. scalene  
→ no sides are the same
2. isosceles  
→ at least 2 sides  $\cong$
3. equilateral  
→ all sides  $\cong$

Classify by angles

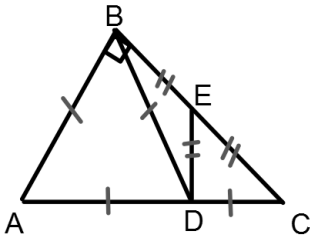
1. acute  
→ all  $\angle$ s less than  $90^\circ$
2. obtuse  
→ 1  $\angle$  greater than  $90^\circ$
3. right  
→ 1  $\angle = 90^\circ$
4. equiangular  
→ all  $\angle$ s  $\cong$  (all  $60^\circ$ )

Example 1: Classify the triangle by angles.



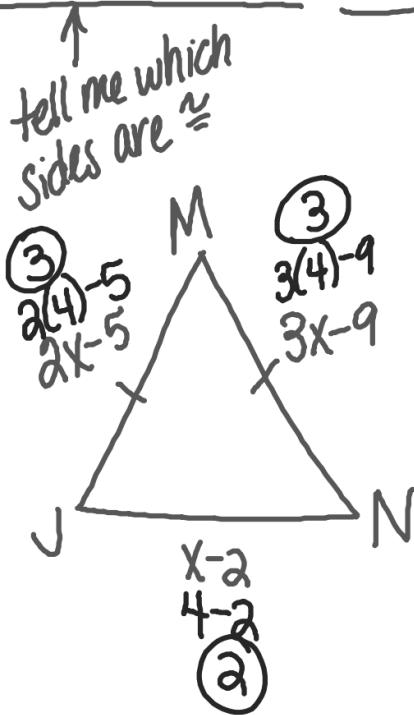
1.  $\triangle ABD$  (60-60-60)  
equiangular
2.  $\triangle BDC$  (30-120-30)  
obtuse
3.  $\triangle ABC$  (60-30-90)  
right

Example 2: Classify the triangle by sides.



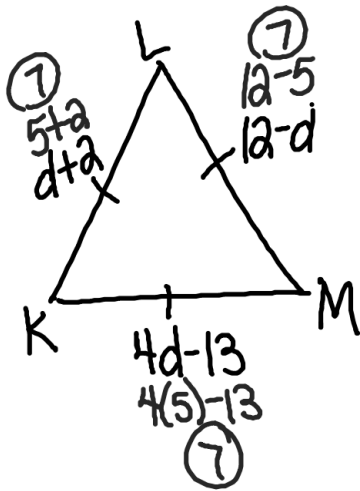
1.  $\triangle ABD$   
equilateral  
(all  $\cong$ )
2.  $\triangle ABC$   
scalene  
(all sides different)
3.  $\triangle EDC$   
isosceles  
(2  $\cong$ )
4.  $\triangle BDC$   
isosceles  
(2  $\cong$ )

Example 3: Find  $x$  and measure of the sides of isosceles  $\triangle JMN$ , if  $m\angle M$  is the vertex angle,  $JM = 2x - 5$ ,  $JN = x - 2$ , and  $MN = 3x - 9$ .



$$\begin{array}{r}
 2x - 5 = 3x - 9 \\
 -3x \quad -3x \\
 \hline
 -x - 5 = -9 \\
 +5 \quad +5 \\
 \hline
 -x = -4 \\
 \frac{-x}{-1} = \frac{-4}{-1} \\
 \boxed{x = 4}
 \end{array}$$

Example 4: Find  $d$  and the measures of each side of the equilateral  $\triangle KLM$  if  $KL = d + 2$ ,  $LM = 12 - d$ , and  $KM = 4d - 13$ .



$$\begin{aligned} d+2 &= 12-d \\ +d & \quad +d \\ \hline 2d+2 &= 12 \\ -2 & \quad -2 \\ \hline 2d &= 10 \\ \frac{2d}{2} &= \frac{10}{2} \\ \boxed{d=5} \end{aligned}$$

Example 5: Find the measure of the sides of  $\triangle RST$ , classify the triangle by sides.

*distance*  
 $R(-1, -3)$ ,  $S(4, 4)$ ,  $T(8, -1)$

$$\begin{aligned} RS &= \sqrt{(4+1)^2 + (4+3)^2} \\ &= \sqrt{(5)^2 + (7)^2} \end{aligned}$$

$$* = \sqrt{25+49}$$

$$RS = \sqrt{74}$$

$$\begin{aligned} RT &= \sqrt{(8+1)^2 + (-1+3)^2} \\ &= \sqrt{(9)^2 + (2)^2} \end{aligned}$$

$$= \sqrt{81+4}$$

$$RT = \sqrt{85}$$

$$\begin{aligned} ST &= \sqrt{(8-4)^2 + (-1-4)^2} \\ &= \sqrt{(4)^2 + (-5)^2} \end{aligned}$$

$$* = \sqrt{16+25}$$

$$ST = \sqrt{41}$$

Scalene

**Turn in:**  
**workbook skills practice 4.1 (1, 4, 9, 10, 12, 13)**

**Homework:**  
**p. 241 (16-34 evens, 36, 37, 44, 49, 50)**

