NAME:_____

1. Complete the following when $\triangle IJK \sim \triangle LMN$.
   a) $m \angle K = m \angle \underline{\quad\quad}$
   b) $\dfrac{KI}{JI} = \dfrac{NL}{?}$

2. In $\triangle QRS$, $QR = 7$, $RS = 13$, and $m\angle R = 46$. In $\triangle UVT$, $VT = 14$, $TU = 28$, and $m\angle T = 46$. State whether the triangles are similar, and if so, write a similarity statement.

3. Find the scale factor that maps $\triangle ABC$ onto $\triangle A'B'C'$ if $A(-2, 0)$, $B(0, 4)$, $C(6, 0)$, $A'(-3, 0)$, $B'(0, 6)$, $C'(9, 0)$. How are the figures related? Explain.

4. $\triangle ABC$ with vertices $A(-2, 1)$, $B(-2, 5)$, and $C(2, 4)$ is similar to $\triangle MNO$ with vertices $M(3, -1)$ and $N(3, -9)$. Find four possibilities for the coordinates of vertex O.

5. A lamppost is 6 feet high and casts an 8-foot shadow. At the same time of day, a flagpole directly behind the lamppost casts a 28-foot shadow.

   H

   6 ft

   28 ft   8 ft

   Which proportion can be used to find the height, H, of the flagpole?
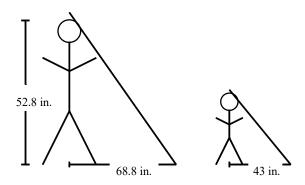
   [A] $\dfrac{H}{28} = \dfrac{6}{8}$ [B] $\dfrac{H}{8} = \dfrac{6}{28}$ [C] $\dfrac{8}{28} = \dfrac{H}{6}$ [D] $\dfrac{H}{28} = \dfrac{8}{6}$
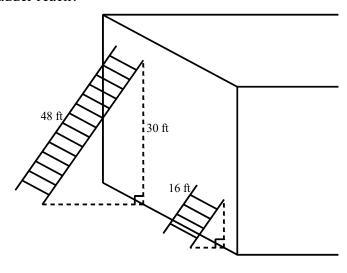
NAME:_____

6. At the same time of day, a man who is 52.8 inches tall casts a 68.8-inch shadow and his son casts a
    43-inch shadow. What is the height of the man's son?

52.8 in.

68.8 in.   43 in.

[A] 33 in.   [B] 85.8 in.   [C] 111.8 in.   [D] 34 in.

7. Two ladders are leaning against a wall at the same angle as shown. How far up the wall does the shorter
    ladder reach?

48 ft

30 ft

16 ft

[A] 8 ft   [B] 10 ft   [C] 6 ft   [D] 20 ft

[1]   a) N b) ML

[2]   not similar

[3] $\dfrac{3}{2}$; they are similar because each side of $\triangle ABC$ is proportional to the corresponding side of $\triangle A'B'C'$.

[4] $(11, -7), (11, -3), (-5, -3),$ or $(-5, -7)$

[5]   A

[6]   A

[7]   B