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

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.

\[ \frac{H}{28} = \frac{6}{8} \]  
\[ \frac{H}{8} = \frac{6}{28} \]  
\[ \frac{8}{28} = \frac{H}{6} \]  
\[ \frac{H}{28} = \frac{8}{6} \]
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?

[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?

1. a) \( N \)  b) \( ML \)

2. not similar

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

3. 

4. \((11, -7), (11, -3), (-5, -3), \text{ or } (-5, -7)\)

5. A

6. A

7. B