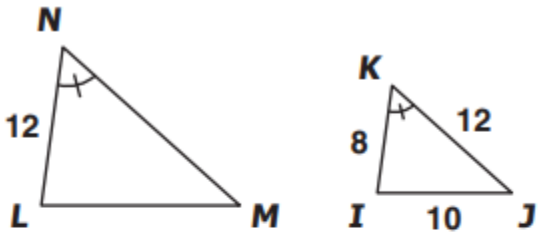
7-4 SOL Questions on Similarity

Name: _____ Time› Start: _____ Finish: _____ Total Time = _____

1.



Which additional piece of information would prove that $\triangle IJK \sim \triangle LMN$?

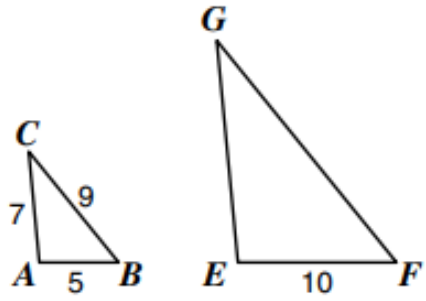
F $NM = 18$

G $LM = 18$

H $NM = 15$

J $LM = 10$

2. **Triangles *ABC* and *EFG* are similar with measurements in centimeters as shown.**



What is the perimeter of triangle *EFG*?

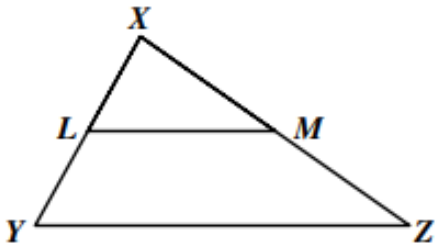
F 21 cm

G 24 cm

H 36 cm

J 42 cm

3.



If triangle *XYZ* is similar to triangle *XLM*, then —

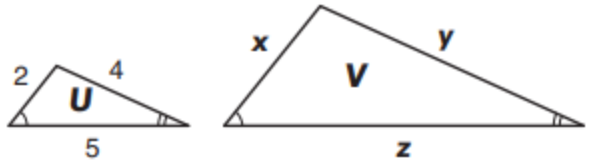
F $XM : XZ = XL : XY$

G $XM : XZ = XY : XL$

H $XL : LM = YZ : XZ$

J $XL : LY = XZ : MZ$

4. **The ratio of the perimeter of $\triangle U$ to the perimeter of $\triangle V$ is 1 : 2.**



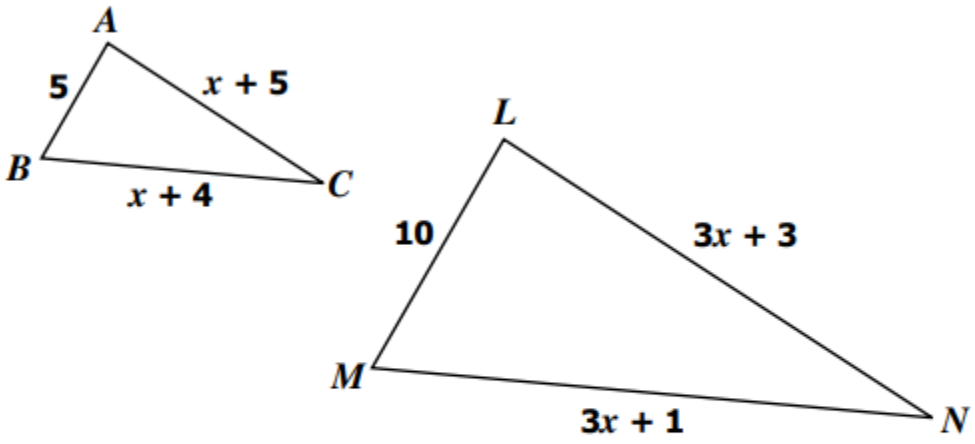
If the triangles are similar, what is the value of $x + y$?

A 3
B 6
C 12
D 18

5. **A man who is 6 feet tall casts a shadow that is 4 feet long. At the same time, a nearby flagpole casts a shadow that is 18 feet long. How tall is the flagpole?**

F 10 ft
G 12 ft
H 22 ft
J 27 ft

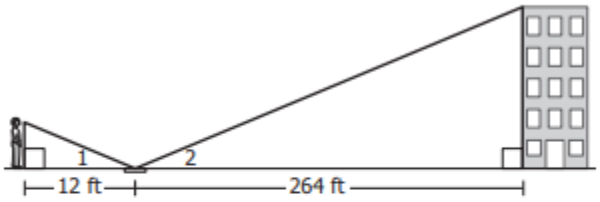
6. **Given: $\triangle ABC \sim \triangle LMN$**



What is the length of $\overline{AC}$?

F 11
G 12
H 22
J 24

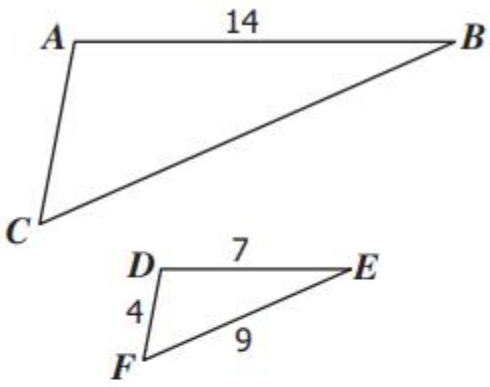
7. **Joseph is standing 12 feet from a mirror lying on the ground, and his eyes are 5 feet above the ground.**



The line-of-sight reflection on the mirror makes $\angle 1$ congruent to $\angle 2$. If the building is 264 feet from the mirror, which is closest to the height of the building?

F 100 ft
G 110 ft
H 130 ft
J 145 ft

8.



In addition to the information given in the drawing, which statement would be sufficient to prove that $\triangle ABC \sim \triangle DEF$?

A $\frac{BC}{AC} = \frac{1}{2}$

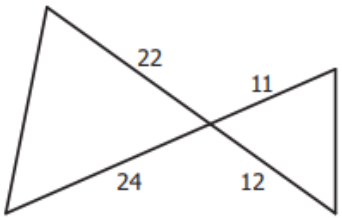
B $\frac{BC}{AC} = \frac{9}{4}$

C $AC = 18$ and $BC = 8$

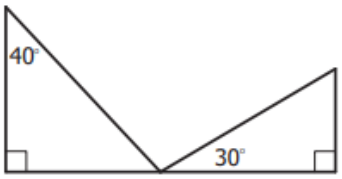
D $AC = 8$ and $BC = 18$

9. **Which drawing contains a pair of similar triangles?**

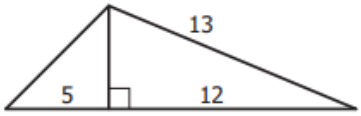
F



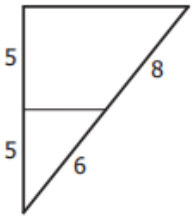
G



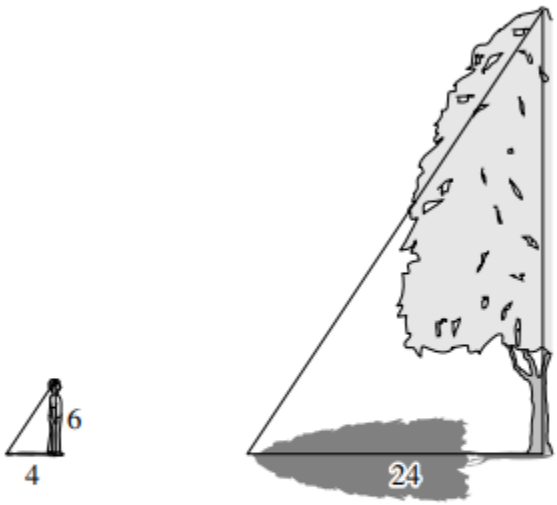
H



J



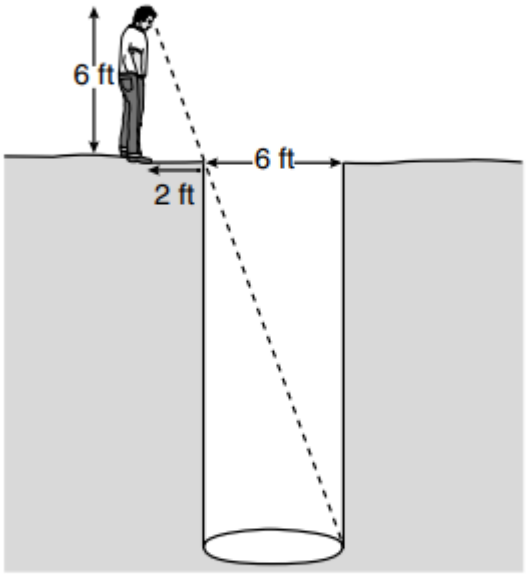
10. **A boy knows that his height is 6 feet. At the time of day when his shadow is 4 feet, a tree's shadow is 24 feet.**



What is the height of the tree?

F 36 ft
G 24 ft
H 18 ft
J 12 ft

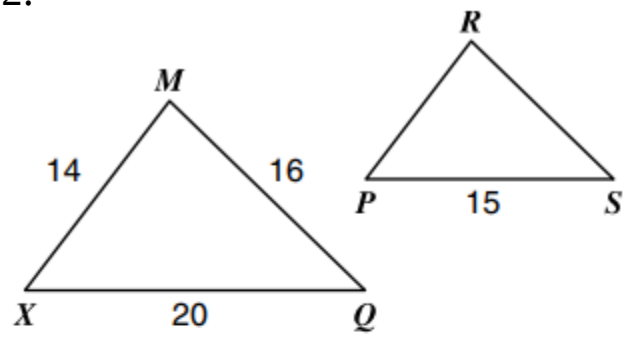
11. **When standing upright, Gary knows his eyes are 6 feet above ground level. To determine the depth of a well, he stands in the position shown.**



Using the given measures, how deep is the well?

A 12 ft
B 14 ft
C 16 ft
D 18 ft

12.



Which proportion can be used to find the value of $\overline{PR}$ if ΔXMQ is similar to ΔPRS?

F $\frac{20}{15} = \frac{14}{PR}$

G $\frac{10}{5} = \frac{7}{PR}$

H $\frac{14}{20} = \frac{15}{PR}$

J $\frac{15}{20} = \frac{14}{PR}$