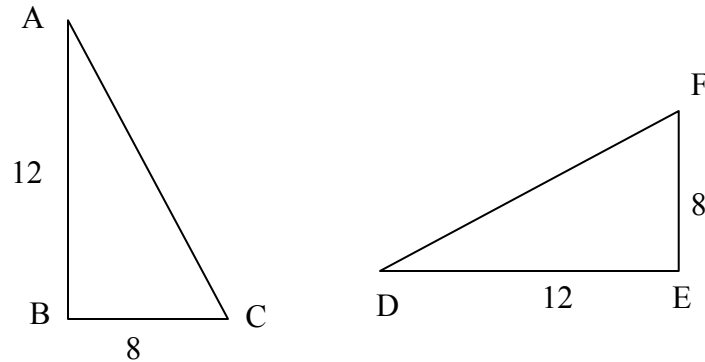


Math 0090 Lab Worksheet #5

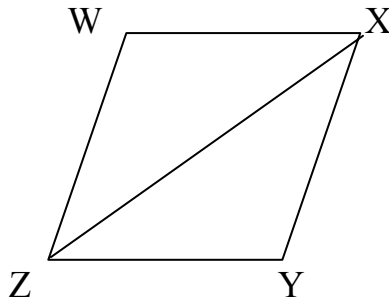
Objective: Solve problems #1 - #10 involving congruency and similarity. #11 through #15 are review problems.

1. Use the diagram below to answer the question that follows.



If $\overline{AB} \perp \overline{BC}$ and $\overline{DE} \perp \overline{EF}$, then which of the following is not a valid conclusion about this figure?

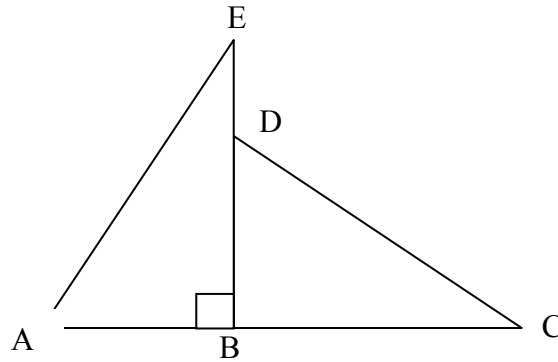
- A. $\triangle ABC \cong \triangle DEF$
 - B. $\angle BAC \cong \angle EFD$
 - C. $\angle BCA \cong \angle EFD$
 - D. $\overline{AC} = \overline{DF}$
2. Use the diagram below to answer the question that follows.



WXYZ is a parallelogram. Diagonal \overline{ZX} divides the parallelogram into two triangles, $\triangle WXZ$ and $\triangle YZX$. Which of the following is a valid conclusion about this figure?

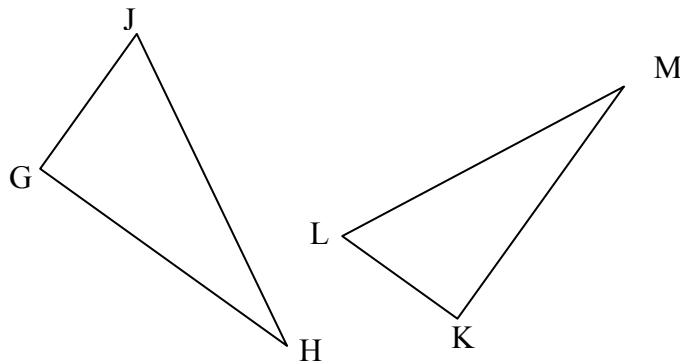
- A. $\triangle WXZ$ is a right triangle
- B. $\angle WZX$ and $\angle XZY$ are complementary
- C. $\triangle WXZ \cong \triangle YZX$
- D. $\angle WXZ \cong \angle WZX$

3. Use the diagram below to answer the question that follows.



If $\overline{BE} \perp \overline{AC}$, $\overline{DB} \cong \overline{AB}$, and $\angle C = \angle E$, then which of the following is a valid conclusion?

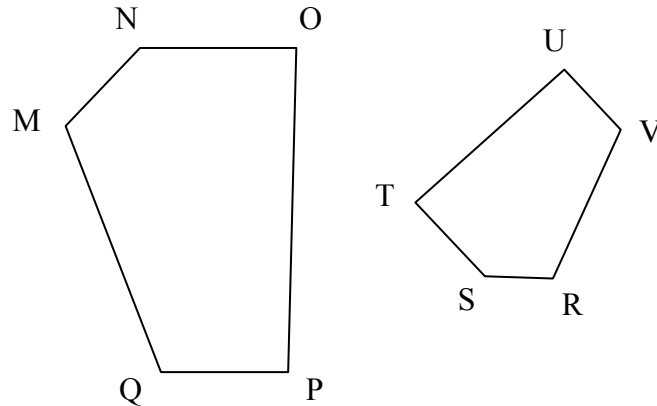
- A. $2\overline{AB} = \overline{AC}$
 - B. $\overline{BE} = \overline{AC}$
 - C. $\overline{DB} = \frac{2}{3}\overline{BE}$
 - D. $\overline{BC} = \overline{BE}$
4. Use the diagram below to answer the question that follows.



$\triangle GHJ$ is similar to $\triangle KLM$. If $GJ = 8$, $GH = 12$, and $KL = 8$, what is the length of KM ?

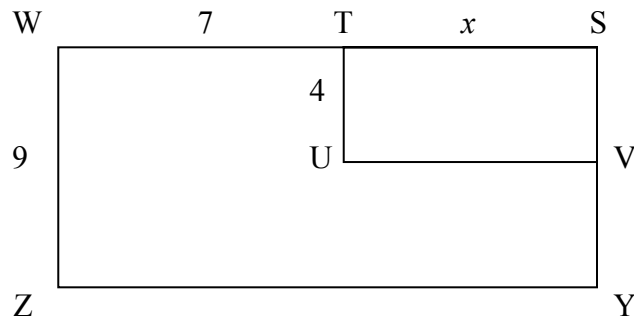
- A. 4
- B. 5.3
- C. 6
- D. 7

5. Use the diagram below to answer the question that follows.



If pentagon MNOPQ is similar to pentagon RSTUV, and $MQ = 13$, $NO = 5$, and $\angle P = 91^\circ$, find $\angle U$.

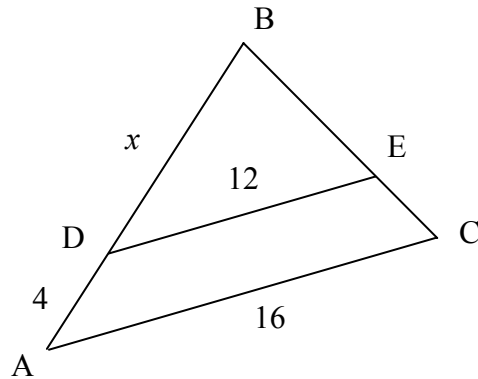
- A. 89°
 B. 91°
 C. 109°
 D. 270°
6. Use the diagram below to answer the question that follows.



Rectangle $WSYZ$ is similar to rectangle $TSVU$. What is the length of side \overline{TS} ?

- A. 2.15
 B. 3.11
 C. 5.60
 D. 6.00

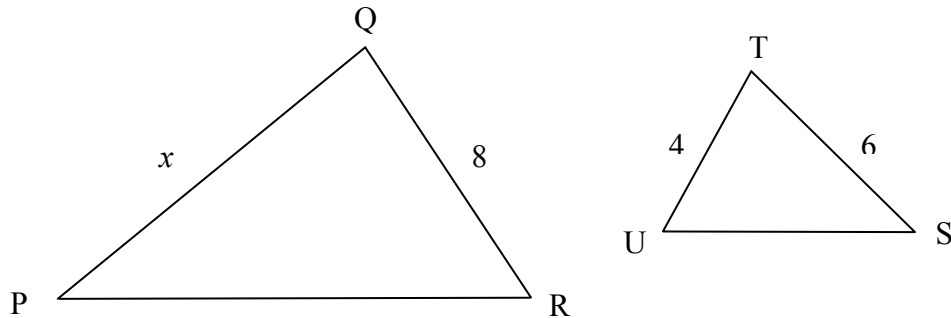
7. Use the diagram below to answer the question that follows.



$\triangle ABC$ is similar to $\triangle DBE$, with $\overline{AD} = 4$, $\overline{DE} = 12$ and $\overline{AC} = 16$. Find \overline{BD} .

- A. 1
- B. 3
- C. 12
- D. 15

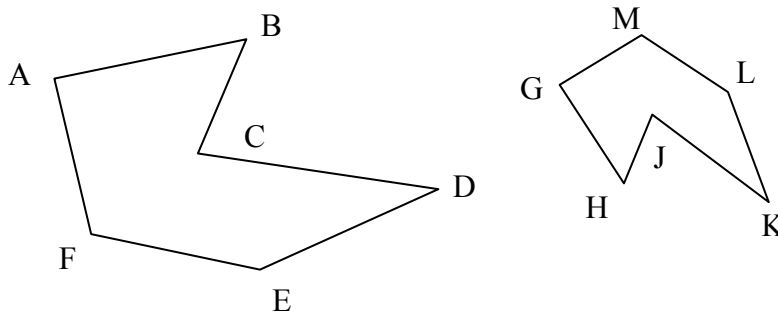
8. Use the diagram below to answer the question that follows.



If $\triangle QRP$ is similar $\triangle TUS$, find the length of \overline{PQ} .

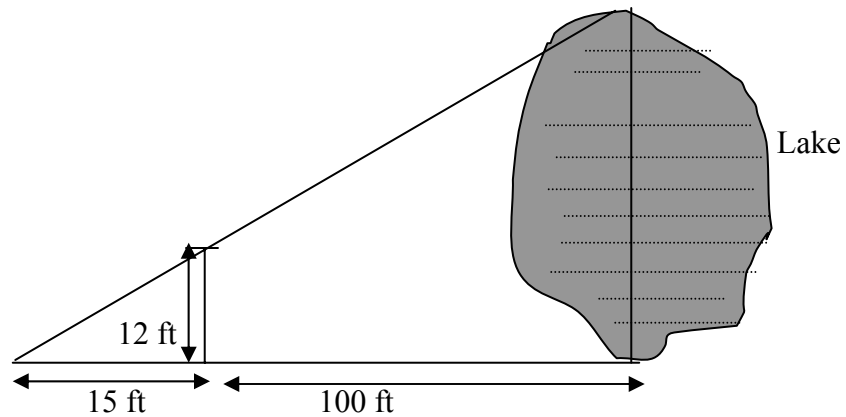
- A. 3
- B. 5.33
- C. 10
- D. 12

9. Use the diagram below to answer the question that follows.



If hexagon $ABCDEF$ is similar to hexagon $GHJKLM$, and $\angle F = 153^\circ$, $\angle B = 71^\circ$, and $\angle K = 44^\circ$, what is the measure of $\angle H$?

- A. 44°
B. 71°
C. 80°
D. 153°
10. Use the diagram below to answer the question that follows.



Use the principles of similarity to find the length of the lake.

- A. 80 ft
B. 92 ft
C. 125 ft
D. 143.75 ft

11. If $\frac{1}{2}x - 5 = 14$, what is the value of $3x - 1$?
- A. 19
 - B. 38
 - C. 113
 - D. 114
12. Which of the following is a factor of $2x^2 + x - 6$?
- A. $2x - 6$
 - B. $x + 2$
 - C. $x + 6$
 - D. $2x + 3$
13. A number N is 12 less than the square of the sum of w^3 and 8. Which of the following expresses this relationship?
- A. $N = 12 - (w^3 + 8)^2$
 - B. $N = 12 - 2(w^3 + 8)$
 - C. $N = (w^3 + 8)^2 - 12$
 - D. $N = 2(w^3 + 8) - 12$
14. Perform the indicated operation: $(3xy^3)(-2x^2y^4)$
- A. $-6x^2y^{12}$
 - B. $-6x^3y^7$
 - C. x^3y^7
 - D. $6x^3y^7$
15. In a city election 35% of the registered voters went to the polls and voted. If 14,700 people voted, how many registered voters are in the city?
- A. 4,200
 - B. 5,145
 - C. 42,000
 - D. 51,450