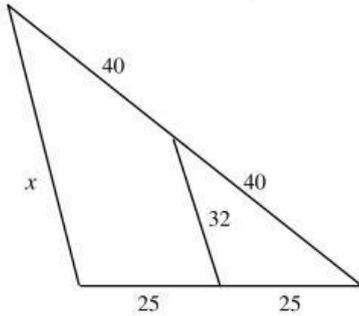


## Geometry Final Exam Review

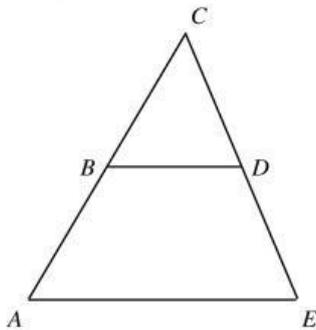
### Multiple Choice

Identify the choice that best completes the statement or answers the question.

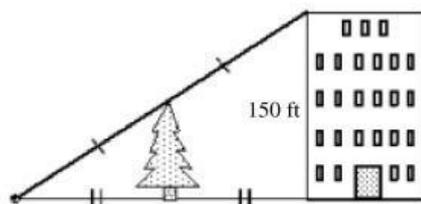
- \_\_\_ 1. Find the value of  $x$ . The diagram is not to scale.



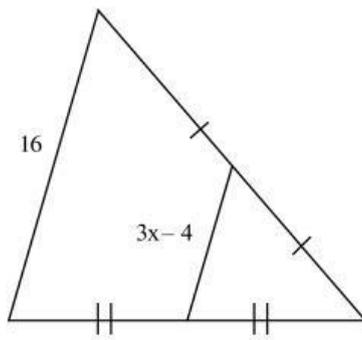
- a. 32                      b. 50                      c. 64                      d. 80
- \_\_\_ 2.  $B$  is the midpoint of  $\overline{AC}$ ,  $D$  is the midpoint of  $\overline{CE}$ , and  $AE = 21$ . Find  $BD$ . The diagram is not to scale.



- a. 42                      b. 21                      c. 11.5                      d. 10.5
- \_\_\_ 3. Use the information in the diagram to determine the height of the tree. The diagram is not to scale.

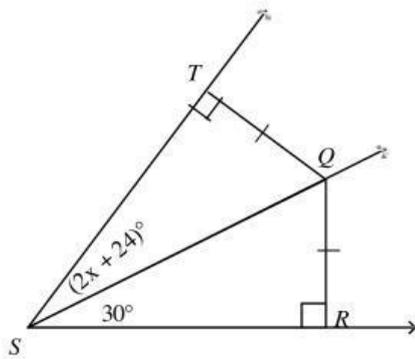


- a. 75 ft                      b. 150 ft                      c. 35.5 ft                      d. 37.5 ft
- \_\_\_ 4. Find the value of  $x$ .



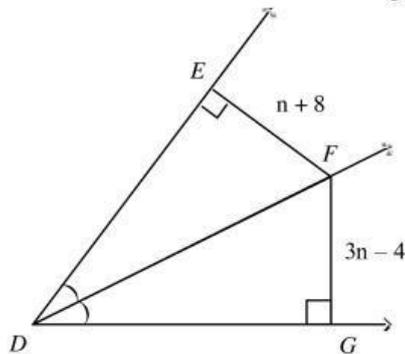
- a. 4                      b. 8                      c. 6.6                      d. 6

5.  $Q$  is equidistant from the sides of  $\angle TSR$ . Find the value of  $x$ . The diagram is not to scale.



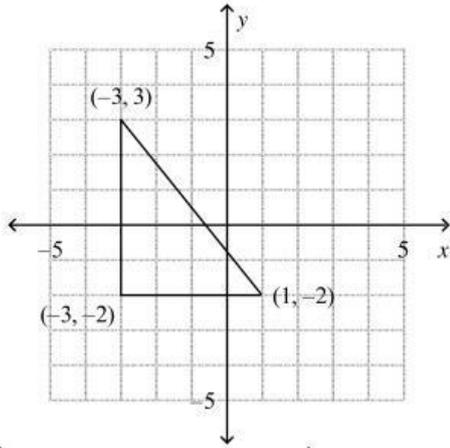
- a. 27                      b. 3                      c. 15                      d. 30

6.  $\overrightarrow{DF}$  bisects  $\angle EDG$ . Find  $FG$ . The diagram is not to scale.



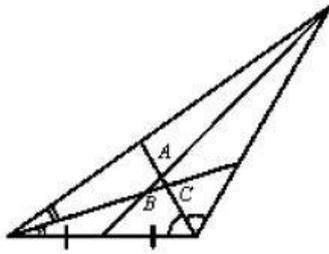
- a. 15                      b. 14                      c. 19                      d. 28

7. Find the center of the circle that you can circumscribe about the triangle.



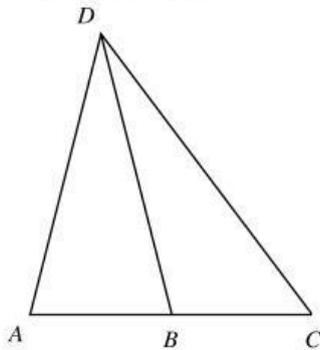
- a.  $(\frac{1}{2}, -1)$       b.  $(-1, \frac{1}{2})$       c.  $(-3, \frac{1}{2})$       d.  $(-1, -2)$

8. Name the point of concurrency of the angle bisectors.



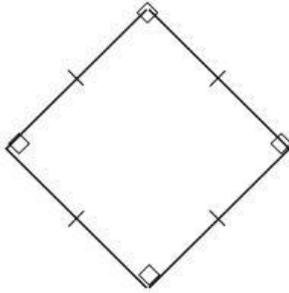
- a. A      b. B      c. C      d. not shown

9. Find the length of  $\overline{AB}$ , given that  $\overline{DB}$  is a median of the triangle and  $AC = 26$ .



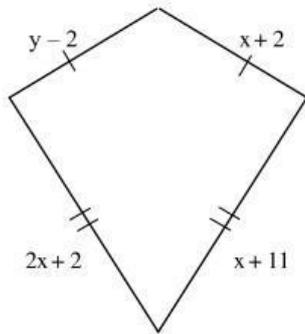
- a. 13      c. 52  
b. 26      d. not enough information

10. Judging by appearance, classify the figure in as many ways as possible.



- a. rectangle, square, quadrilateral, parallelogram, rhombus
- b. rectangle, square, parallelogram
- c. rhombus, trapezoid, quadrilateral, square
- d. square, rectangle, quadrilateral

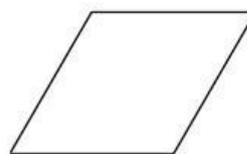
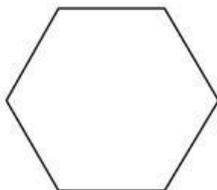
\_\_\_ 11. Find the values of the variables and the lengths of the sides of this kite.



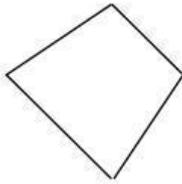
- a.  $x = 9, y = 13; 7, 15$
- b.  $x = 13, y = 9; 7, 15$
- c.  $x = 9, y = 13; 11, 20$
- d.  $x = 13, y = 9; 11, 11$

- \_\_\_ 12. Which statement is true?
- a. All quadrilaterals are rectangles.
  - b. All quadrilaterals are squares.
  - c. All rectangles are quadrilaterals.
  - d. All quadrilaterals are parallelograms.

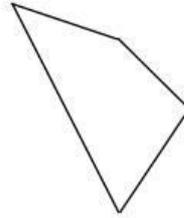
- \_\_\_ 13. Judging by appearances, which figure is a trapezoid?
- a.
  - c.



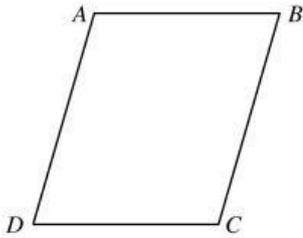
b.



d.

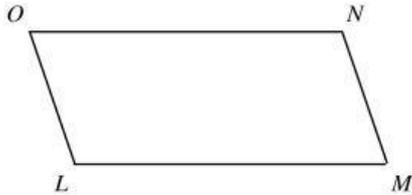


\_\_\_ 14.  $ABCD$  is a parallelogram. If  $m\angle CDA = 66$ , then  $m\angle BCD = \underline{\quad?}$ . The diagram is not to scale.



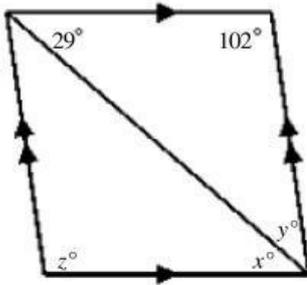
- a. 66                      b. 124                      c. 114                      d. 132

\_\_\_ 15.  $LMNO$  is a parallelogram. If  $NM = x + 15$  and  $OL = 3x + 5$  find the value of  $x$  and then find  $NM$  and  $OL$ .



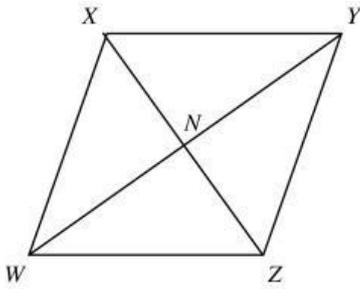
- a.  $x = 7, NM = 20, OL = 22$                       c.  $x = 7, NM = 22, OL = 22$   
 b.  $x = 5, NM = 20, OL = 20$                       d.  $x = 5, NM = 22, OL = 20$

\_\_\_ 16. Find the values of the variables in the parallelogram. The diagram is not to scale.



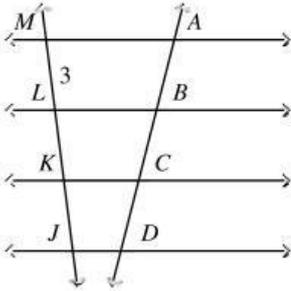
- a.  $x = 49, y = 29, z = 102$                       c.  $x = 49, y = 49, z = 131$   
 b.  $x = 29, y = 49, z = 131$                       d.  $x = 29, y = 49, z = 102$

\_\_\_ 17.  $WXYZ$  is a parallelogram. Name an angle congruent to  $\angle WZY$ .



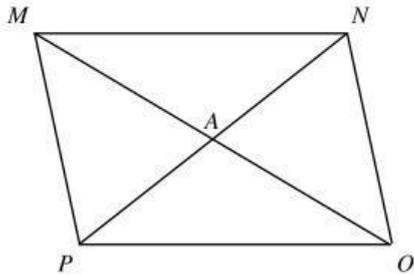
- a.  $\angle ZXY$       b.  $\angle XWZ$       c.  $\angle ZXW$       d.  $\angle WXY$

18. In the figure, the horizontal lines are parallel and  $AB = BC = CD$ . Find  $JM$ . The diagram is not to scale.



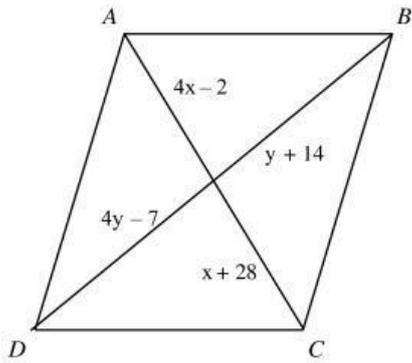
- a. 9      b. 12      c. 6      d. 3

19. Find  $AM$  in the parallelogram if  $PN = 9$  and  $AO = 4$ . The diagram is not to scale.



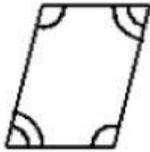
- a. 8      b. 4      c. 9      d. 4.5

20. Find values of  $x$  and  $y$  for which  $ABCD$  must be a parallelogram. The diagram is not to scale.



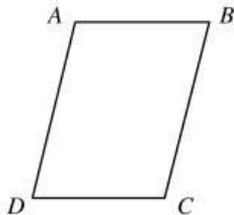
- a.  $x = 10, y = 38$     b.  $x = 10, y = 21$     c.  $x = 10, y = 7$     d.  $x = 7, y = 10$

21. Based on the information in the diagram, can you prove that the figure is a parallelogram? Explain.



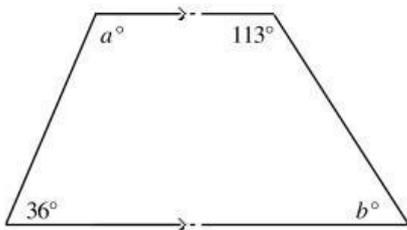
- a. Yes; opposite sides are congruent.  
 b. Yes; opposite angles are congruent.  
 c. No; you cannot prove that the quadrilateral is a parallelogram.  
 d. Yes; two opposite sides are both parallel and congruent.

22. If  $m\angle B = m\angle D = 41$ , find  $m\angle C$  so that quadrilateral  $ABCD$  is a parallelogram. The diagram is not to scale.



- a. 41    b. 139    c. 82    d. 278

23. Find the values of  $a$  and  $b$ . The diagram is not to scale.



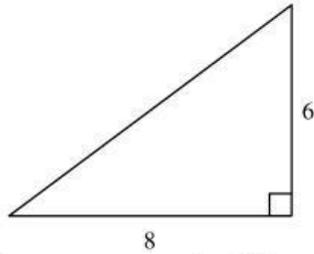
- a.  $a = 144, b = 67$     c.  $a = 113, b = 67$

b.  $a = 144, b = 36$

d.  $a = 113, b = 36$

**Find the length of the missing side. The triangle is not drawn to scale.**

\_\_\_ 24.



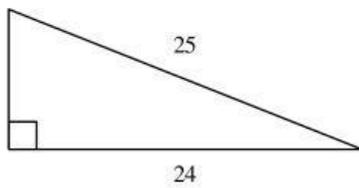
a. 28

b. 100

c. 10

d. 48

\_\_\_ 25.



a. 35

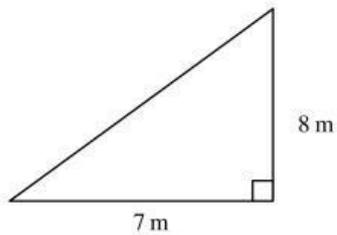
b. 49

c. 7

d. 2

**Find the length of the missing side. Leave your answer in simplest radical form.**

\_\_\_ 26.



Not drawn to scale

a.  $\sqrt{17}$  m

b. 113 m

c.  $\sqrt{113}$  m

d.  $\sqrt{71}$  m

\_\_\_ 27. Wayne used the diagram to compute the distance from Ferris to Dunlap to Butte. How much shorter is the distance directly from Ferris to Butte than the distance Wayne found?