



NAME:

GRADE:

TIME:60 mins

DATE:

GEOMETRY

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1. Points D , E , and F are distinct points, and $DE = EF$. Which of these statements must be true? Select all that apply.

- A. D , E , and F are collinear
- B. D , E , and F are coplanar
- C. E is the midpoint of \overline{DF}
- D. $\overline{DE} \cong \overline{EF}$

2. An angle measures 69° . What is the measure of its complement?

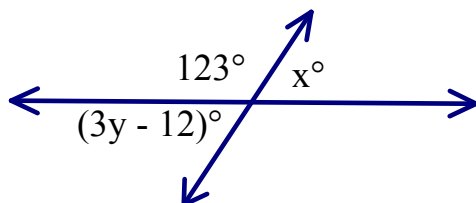
- A. 21°
- B. 31°
- C. 111°
- D. 121°

3. $\angle ABC$ is bisected by \overline{BD} .

If $m\angle ABD = 71^\circ$, then what is $m\angle ABC$?

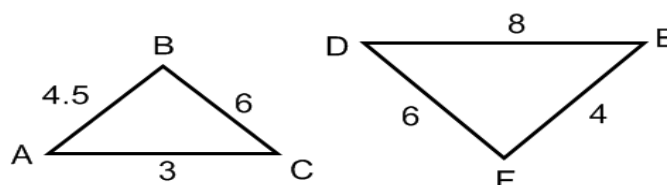
- A. 19°
- B. 35.5°
- C. 109°
- D. 142°

4. Find the value of x in the figure to the below



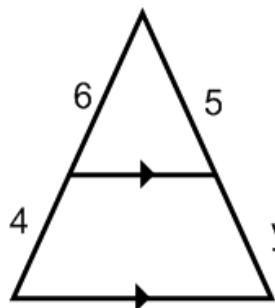
- A. 15°
- B. 27°
- C. 57°
- D. 63°

5. Determine whether the triangles are similar. If so, write a similarity statement.



- A. Yes, $\triangle ABC \sim \triangle DEF$
- B. Yes, $\triangle ABC \sim \triangle DFE$
- C. Yes, $\triangle ABC \sim \triangle FDE$
- D. The triangles are not similar

6. Solve for y .



- A. 6
- B. 5
- C. $9/4$
- D. $10/3$



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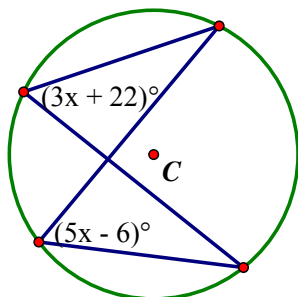
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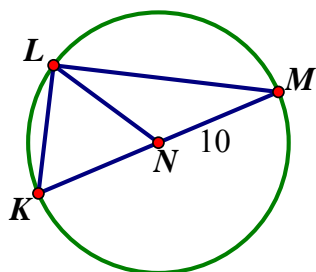
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7. Find the value of x ?



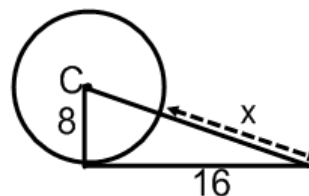
- A. 12
- B. 14
- C. 16
- D. 20

8. The figure to the right shows a circle with center N , diameter \overline{MK} , and inscribed $\triangle KLM$. $NM = 10$. Let $m\angle KLM = (x + 63)^\circ$, Find the value of $m\angle LMK = (x - 2)^\circ$.



- A. 10
- B. 15
- C. 20
- D. 25

9. Find the value of x in each figure below. Assume that segments that appear to be tangent are tangent



- A. $8(\sqrt{5} - 1)$
- B. $-8(\sqrt{5} - 1)$
- C. $4(\sqrt{5} - 1)$
- D. $16(\sqrt{5} - 1)$

10. What is the distance between $(-4, 6)$ & $(-7, 3)$?

- A. 3
- B. $3\sqrt{2}$
- C. 18
- D. $\sqrt{18}$

11. The midpoint of a line segment is $(-5, -2)$. One endpoint has the coordinates $(-1, 6)$. What are the coordinates of the other endpoint?

- A. $(-3, 2)$
- B. $(-6, 4)$
- C. $(3, 14)$
- D. $(-9, -10)$



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12. If one line passes through the points $(2, -5)$ & $(8, -5)$, what must be the slope of a line perpendicular to it?

- A. -1
- B. 1
- C. 0
- D. Undefined

13. What is the equation of the line parallel to $3x + 2y = 8$ and passes through the point $(4, -3)$?

- A. $y = -\frac{3}{2}x - \frac{1}{2}$
- B. $y = \frac{2}{3}x - \frac{17}{3}$
- C. $y = -\frac{3}{2}x + 3$
- D. $y = \frac{2}{3}x + 6$

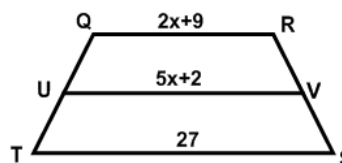
14. What is the radius and center for $(x - 2)^2 + y^2 = 16$

- A. $r = 16$; center is $(2, 0)$
- B. $r = 4$; center is $(-2, 0)$
- C. $r = 16$; center is $(-2, 0)$
- D. $r = 4$; center is $(2, 0)$

15. Triangle PQR is graphed in the coordinate plane with the vertices $P(-7, -4)$, $Q(-7, -8)$, and $R(3, -3)$. Name the vertices of the image reflected in the line $y = x$.

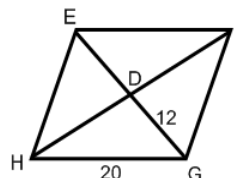
- A. $P'(-4, -7)$, $Q'(-8, -7)$, $R'(-3, 3)$
- B. $P'(4, 7)$, $Q'(8, 7)$, $R'(3, -3)$
- C. $P'(4, -7)$, $Q'(8, -7)$, $R'(3, 3)$
- D. $P'(-4, 7)$, $Q'(-8, 7)$, $R'(-3, -3)$

16. $QRST$ is a trapezoid. Find the length of midsegment \overline{UV} .



- A. 22
- B. 24
- C. 26
- D. 28

17. $EFGH$ is a rhombus. Find DH .



- A. 16
- B. $4\sqrt{34}$
- C. 544
- D. 256



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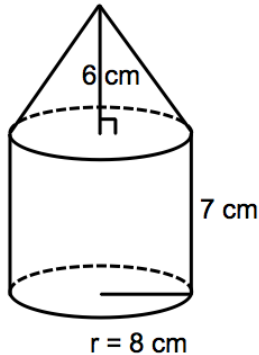
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18. The length and the width of a rectangle $3x + 2$ and $x + 3$ respectively. If the perimeter is 58 units, what is the area?

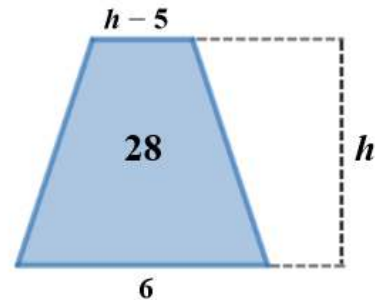
- A. 140 square units
- B. 150 square units
- C. 180 square units
- D. 210 square units

19. Find the volume of the composite figure.



- A. 832π
- B. 576π
- C. 448π
- D. 128π

20. A trapezoid is shown. What is the value of h if the area is 28 square units?



- A. 5
- B. 6
- C. 7
- D. 8