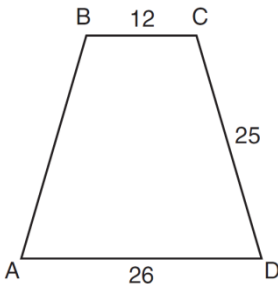


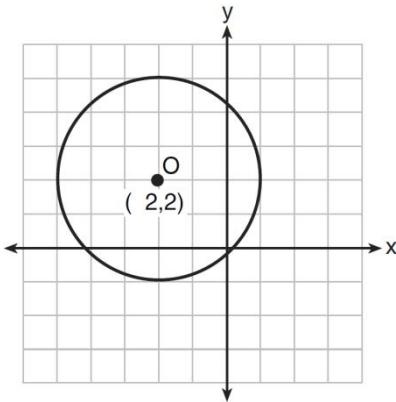
1. In the diagram below of isosceles trapezoid $ABCD$, $AB = CD = 25$, $AD = 26$, and $BC = 12$.



What is the length of an altitude of the trapezoid?

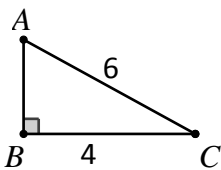
- 1) 7
- 2) 14
- 3) 19
- 4) 24

2. What is an equation of circle O shown in the graph below?



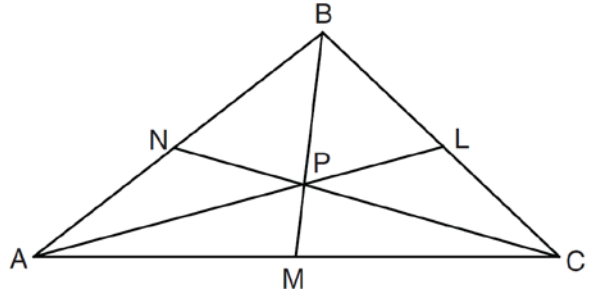
- 1) $(x+2)^2 + (y-2)^2 = 9$
- 2) $(x+2)^2 + (y-2)^2 = 3$
- 3) $(x-2)^2 + (y+2)^2 = 9$
- 4) $(x-2)^2 + (y+2)^2 = 3$

3. What is the $\cos(A)$?



- | | |
|------------------|-------------------------|
| 1) $\frac{2}{3}$ | 3) $\frac{\sqrt{5}}{3}$ |
| 2) $\frac{3}{2}$ | 4) $\frac{\sqrt{5}}{2}$ |

4. In the diagram below, point P is the centroid of $\triangle ABC$.



If $PM = 2x + 5$ and $BP = 7x + 4$, what is the length of \overline{PM} ?

- 1) 9
- 2) 2
- 3) 18
- 4) 27

5. In $\triangle RST$, $m\angle R = 58$ and $m\angle S = 73$. Which inequality is true?

- 1) $RT < TS < RS$
- 2) $RS < RT < TS$
- 3) $RT < RS < TS$
- 4) $RS < TS < RT$

6. The number of degrees in the sum of the interior angles of a pentagon is

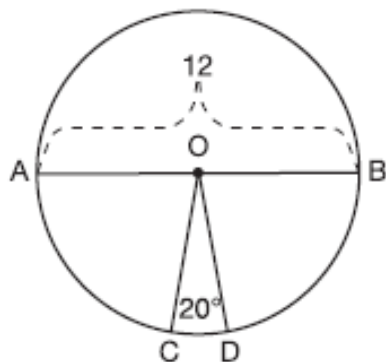
- 1) 72
- 2) 360
- 3) 540
- 4) 720

7. What is the equation of a line passing through $(2, -1)$ and parallel to the line represented by the equation $y = 2x + 1$?

- 1) $y = -\frac{1}{2}x$
- 2) $y = -\frac{1}{2}x + 1$
- 3) $y = 2x - 5$
- 4) $y = 2x - 1$

8.

In the diagram below of circle O , diameter \overline{AB} and radii \overline{OC} and \overline{OD} are drawn. The length of \overline{AB} is 12 and the measure of $\angle COD$ is 20 degrees.



If $\widehat{AC} \cong \widehat{BD}$, find the area of sector BOD in terms of π .

9.

The line $y = 2x - 4$ is dilated by a scale factor of $\frac{3}{2}$ and centered at the origin. Which equation represents the image of the line after the dilation?

- (1) $y = 2x - 4$
- (2) $y = 2x - 6$
- (3) $y = 3x - 4$
- (4) $y = 3x - 6$

10.

Given: $\triangle XYZ$, $\overline{XY} \cong \overline{ZY}$, and \overline{YW} bisects $\angle XYZ$

Prove that $\angle YWZ$ is a right angle.

