

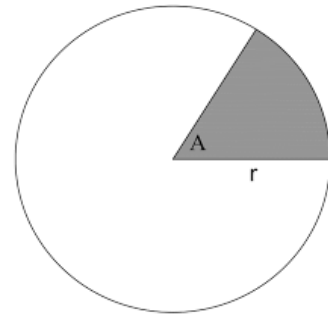


## Geometry

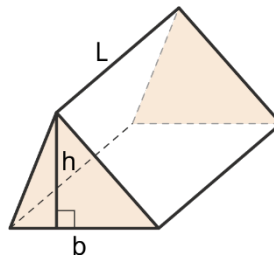
### Module 3 – Exam

1. If the shaded area  $A$  covers one-eighth of a circle, how many degrees is its arc?

2. For the same circle in #1, assume the arc is  $60^\circ$ . In that case, find  $A$ .  
(In other words, find  $A$  as a fraction of the full circle.)



3. If this prism has  $b = 4$ ,  $h = 3$  and  $L = 10$ , what is its volume?



4. A right cylinder has radius 5 and height 10. What is its volume? (Leave  $\pi$  as  $\pi$ ; no need to calculate it for your answer.)

5. For the same right cylinder in #3 above, what is its surface area?  
(Leave  $\pi$  as  $\pi$ ; no need to calculate it for your answer.)

6. What is the distance between the points  $(4,9)$  and  $(7,14)$  ?
7. Write an equation for a circle with radius 4 and center  $(5,6)$ .
8. For the same circle in #6 above: does the point  $(6,10)$  lie on the circle?
9. A line passes through the points  $(3, 6)$  and  $(-3, -9)$ . What is its slope?
10. For the line in #9 above: what is the slope of a line perpendicular to it?
11. What is the midpoint between the points  $(5, 10)$  and  $(-5, -10)$  ?

Answers:

1.  $45^\circ$

2.  $A = \frac{60^\circ}{360^\circ} \pi r^2 = \frac{\pi r^2}{6}$

3.  $V = \frac{1}{2} \times 4 \times 3 \times 10 = 60$

4.  $V = 250\pi$

5.  $SA = \pi(5)^2 + \pi(5)^2 + 2\pi(5)(10)$   
 $= 150\pi$

6.  $d = 6$

7.  $16 = (x - 5)^2 + (y - 6)^2$

8. Putting  $x = 6$  and  $y = 10$  into the equation from #7 above, gives  $16 = 17$  which is false. Therefore, the point  $(6,10)$  does not lie on the circle.

9.  $m = \frac{(-9-6)}{(-3-3)} = \frac{5}{2}$

10.  $m = -\frac{2}{5}$

11.  $(0,0)$