

11.1 – 11.4 Quiz Review

Core Vocabulary you need to know and the page it can be found on in your book.

circumference, p. 594	radius of a regular polygon, p. 611	face, p. 618
arc length, p. 595	apothem of a regular polygon, p. 611	edge, p. 618
radian, p. 597	central angle of a regular polygon, p. 611	vertex, p. 618
population density, p. 603	polyhedron, p. 618	cross section, p. 619
sector of a circle, p. 604		solid of revolution, p. 620
center of a regular polygon, p. 611		axis of revolution, p. 620

Core Concepts you will be assessed on and what page it can be found on in your book.

Section 11.1

Circumference of a Circle, p. 594 Arc Length, p. 595 Converting between Degrees and Radians, p. 597

Section 11.2

Area of a Circle, p. 602 Population Density, p. 603 Area of a Sector, p. 604

Section 11.3

Area of a Rhombus or Kite, p. 610 Area of a Regular Polygon, p. 612

Section 11.4

Types of Solids, p. 618 Cross Section of a Solid, p. 619 Solids of Revolution, p. 620

11.1

1. $m\widehat{EF}$

$$\frac{13.7}{2\pi(7)} = \frac{x}{360}$$

$$14\pi x = 4932$$

$$x \approx 112.136$$

112°

2. arc length of \widehat{QS}

$$\frac{x}{2\pi(4)} = \frac{83}{360}$$

$$360x = 664\pi$$

$$x = \frac{83\pi}{45} \text{ cm}$$

$$\approx 5.794 \text{ cm}$$

3. circumference of $\odot N$

$$\frac{8}{x} = \frac{48}{360}$$

$$48x = 2880$$

$$x = 60 \text{ in}$$

4. Convert 26° to radians and $\frac{5\pi}{9}$ radians to degrees.

$$26^\circ \cdot \frac{\pi}{180} = \frac{26\pi}{180} = \frac{13\pi}{90} \text{ radians}$$

$$\frac{5\pi}{9} \cdot \frac{180}{\pi} = \frac{900}{9} = 100^\circ$$

11.2

5. a) area of the red sector

$$\frac{x}{\pi(12)^2} = \frac{100}{360}$$

$$360x = 14400\pi$$

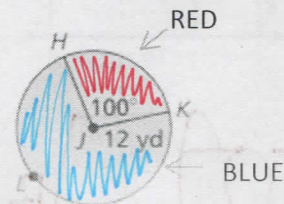
$$x = 40\pi \approx 125.664 \text{ yd}^2$$

b) area of the blue sector

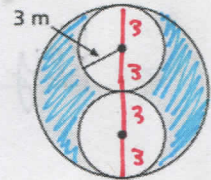
$$\frac{x}{\pi(12)^2} = \frac{360-100}{360} = \frac{260}{360}$$

$$360x = 37440\pi$$

$$x = 104\pi \approx 326.726 \text{ yd}^2$$



6. The two white congruent circles just fit into the blue circle. What is the area of the blue region?



$$\begin{aligned}
 B\odot - 2S\odot &= \pi r^2 - (\pi r^2)(2) \\
 r=6 \quad r=3 &= \pi(6)^2 - 2\pi(3)^2 \\
 &= 36\pi - 18\pi \\
 &= 18\pi \text{ m}^2 \approx 56.549 \text{ m}^2
 \end{aligned}$$

11.3

In the diagram, RSTUVWX is a regular octagon inscribed in $\odot C$.

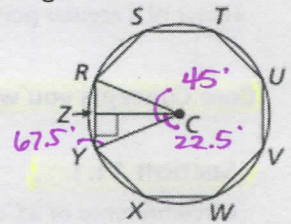
7. Identify the ...

- a) center **C** b) radius **CR or CY** c) apothem **CZ** d) a central angle

$\angle RCY, \angle ZCY, \angle RCZ$

8. Find...

- a) $m\angle RCV = 180^\circ$ b) $m\angle RCZ = 22.5^\circ$ c) $m\angle ZRC = 67.5^\circ$

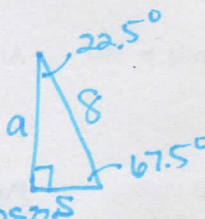


9.

a) The radius of the circle is 8 units. Find the area of the octagon.

$$\sin 22.5^\circ = \frac{a}{8} \quad \cos 22.5^\circ = \frac{s}{8} \quad A = \frac{1}{2}as$$

$$S = 8(\sin 22.5^\circ) \quad a = 8(\cos 22.5^\circ) \quad A = \frac{1}{2}(8\sin 22.5^\circ)(8\cos 22.5^\circ)$$



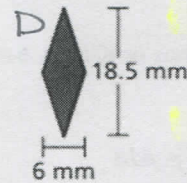
$$A \approx 181.019 \text{ u}^2$$

b) Find the area of each rhombus tile. Then find the area of the pattern.

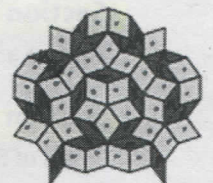
$$A_L = \frac{1}{2}(11.4)(15.7) = 89.49 \text{ mm}^2$$

$$\begin{aligned}
 A_p &= 21(A_D) + 32(A_L) \\
 &= 21(55.5) + 32(89.49) \\
 &= 1165.5 + 2863.68
 \end{aligned}$$

$$A_p = 4029.18 \text{ mm}^2$$



$$A_D = \frac{1}{2}(18.5)(6) = 55.5 \text{ mm}^2$$

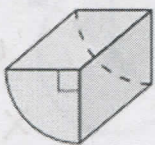


21D
32L

11.4

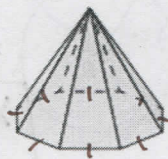
Tell whether the solid is a polyhedron. If it is, name the polyhedron.

10.



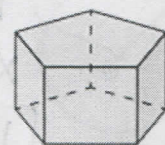
NO, has curves.

11.

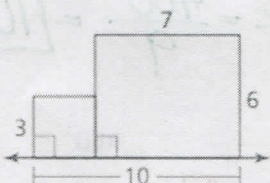


Yes, octagonal pyramid.

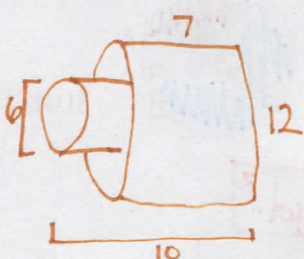
12.



Yes pentagonal prism.



13. Sketch the composite solid produced by rotating the figure around the given axis. Then identify and describe the composite solid.



2 cylinders (toilet paper in roll)