Geometry Sem 2 Review Wk #2 Name KEY

This worksheet covers content found in chapters 9, 10, and 11. ☺

## #1 – 11: From Chapter 9

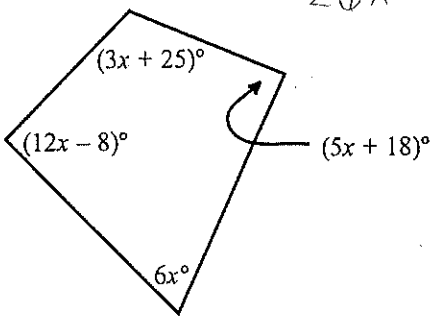
1) Find the value of $x$.

$6x + 3x+25 + 12x-8 + 5x+18 = 360$

$26x + 35 = 360$

$26x = 325$

$x = 12.5$



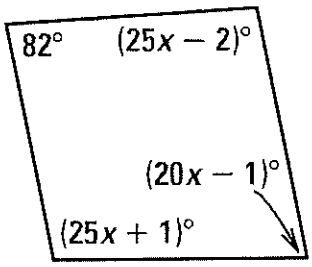

**A.** $x = 3.7$

**B.** $x = 5.6$

**C.** $x = 8.3$

**D.** $x = 12.5$

2) Find $x$. Round to one decimal place, if needed.




$82 + 25x-2 + 25x+1 + 20x-1 = 360$

$70x + 80 = 360$

$70x = 280$

$x = 4$

**For #3 – 4, find the sum of the interior angles for each polygon.**

3) nonagon

$180(9-2)$

$180(7)$

$1260°$

4) heptagon

$180(7-2)$

$900$

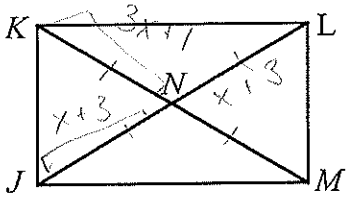
5) In the rectangle below $JN = x + 3$ and $KN = 3x + 1$. Find $x$ **and** the length of segment **JL.**

C

$3x+1 = x+3$

$2x = 2$

$x = 1$




$JL = 2(x+3)$

$= 2(1+3)$

$= 8$

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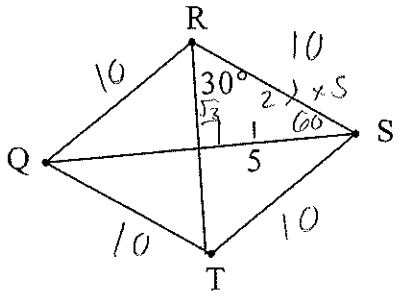
6) Given the rhombus QRST as shown below. Find its perimeter.

$P = 4(10)$

$40$




7) A square has perimeter of 80 cm. Find its area. $80/4$

side $= 20$

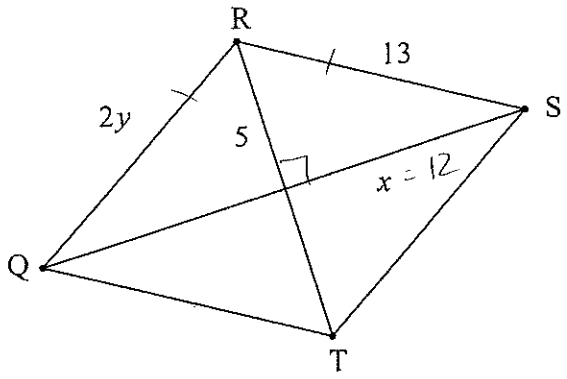
$A = 20^2$

$= 400 \text{ cm}^2$

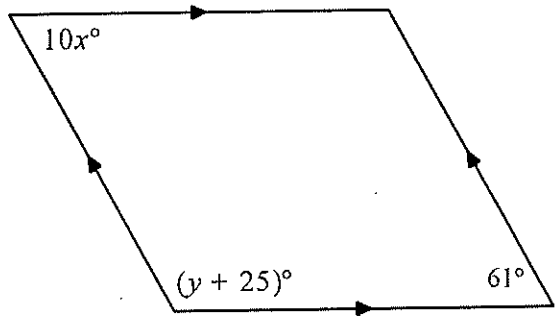
8) Given the rhombus QRST as shown below. Find $x$ and $y$.

$2y = 13$

$y = 6.5$




9) Find the variables for the parallelogram shown below.




$y + 25 + 61 = 180$

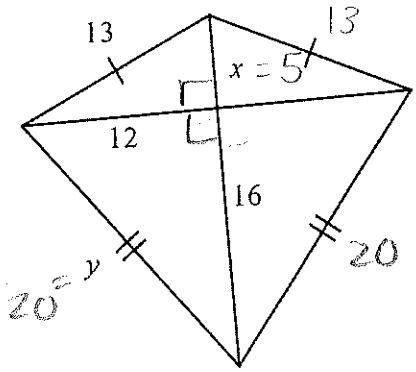
$y + 86 = 180$

$y = 94$

$10x = 61$

$x = 6.1$

**For #10 – 11, use the kite shown to the right.**




10) Find $x$ and $y$.

$12^2 + 16^2 = y^2$

$144 + 256 = y^2$

$\sqrt{400} = y$

$20 = y$

11) Find the perimeter of the kite.

$P = 20 + 20 + 13 + 13$

$P = 66$

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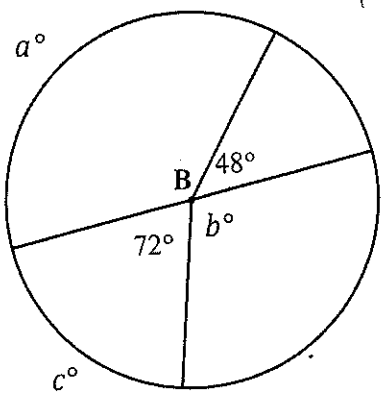
## #12 - 20: From Chapter 10

12) Find *a*, *b*, and *c* in the circle shown to the right.



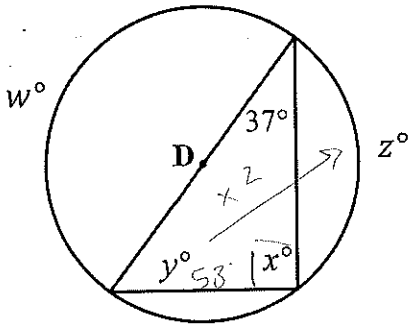

$48 + a = 180$

$a = 132$

$180 - 72 = b$

$108 = b$

13) Find the variables in circle D below.




$180 - 37 - 90 = y$

$53 \cdot 2 = z$

$106 = z$

$x = 90°$

$y = 53$

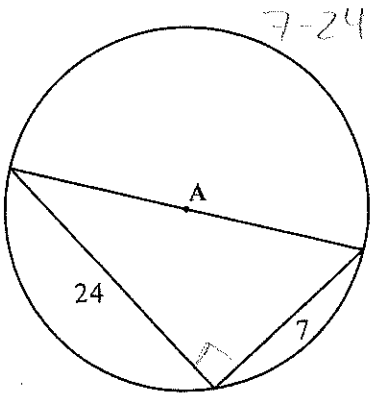
$w = 180°$

14) For circle A below, find the diameter **and** the circumference of the circle, in terms of pi.

$d = 25$

$C = d\pi$

$C = 25\pi$

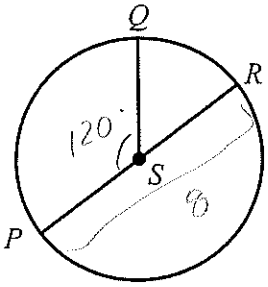



15) In the circle below, diameter $PR = 8\ cm$ and $m\angle QSP = 120°$. What is the arc length of $\overset{\frown}{PQ}$ ? Round to one decimal place.

$\ell = \frac{m}{360} 2\pi r$

$\ell = \frac{120}{360} 2\pi (4)$

$\ell = 8.4\ cm$




$r = 4$

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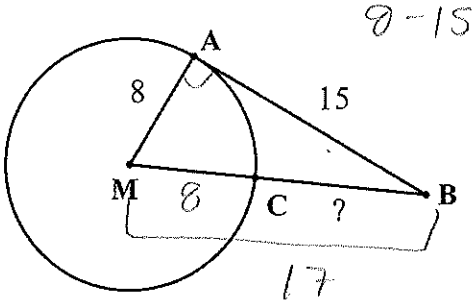
16) $\overline{AB}$ is tangent to circle $M$ at point $A$. The circle has a radius of 8 and $\overline{AB} = 15$. What is the length of $\overline{CB}$?

$CB = 17 - 8 = 9$

8-15-17




17) What is the area of a circle, in terms of pi, that has a circumference of $100\pi$ feet ?

$\frac{100\pi}{2\pi} = \frac{2\pi r}{2\pi}$

$50 = r$

ft

$A = \pi r^2$

$A = \pi (50)^2$

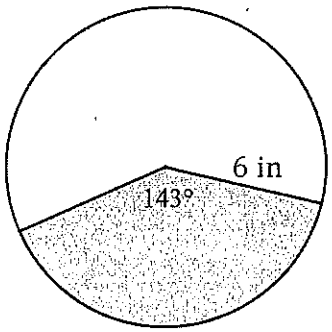
$A = 2500\pi \text{ ft}^2$

18) Find the area of the shaded sector shown to the right. Round to one decimal place.

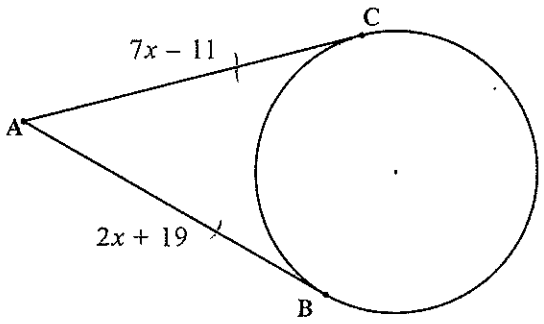
$A = \frac{m}{360} \pi r^2$

$A = \frac{143}{360} \pi (6)^2$

$A = 44.9 \text{ in}^2$




19) Find $x$ and the length of $\overline{AB}$ in the diagram shown below, given that $\overline{AB}$ and $\overline{AC}$ are tangent to the circle.




$7x - 11 = 2x + 19$

$5x = 30$

$x = 6$

$AB = 2(6) + 19$

$= 31$

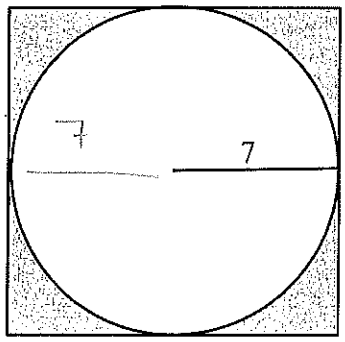
20) Find the area of the shaded region in the figure below. Write your answer in terms of pi.

$A_{square} = 14 \cdot 14 = 196$

$A_{circle} = \pi r^2 = \pi (7)^2$

$= 49\pi$

$196 - 49\pi$



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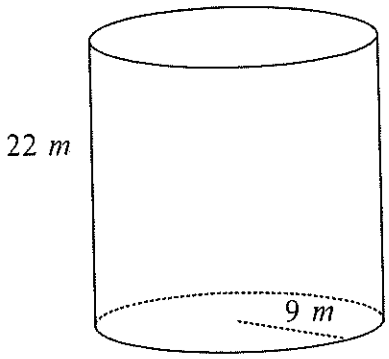
## #21 – 30: From Chapter 11

21) Find the volume of the cylinder to the right, in terms of pi.




$V = \pi r^2 h$

$V = \pi (9)^2 (22)$

$V = 1782\pi\ m^3$

22) A rectangular prism has a volume of 350 $cm^3$. Find the height of the prism if the length of the prism is 8 $cm$ and the width of the prism is 15 $cm$. Round to one decimal place, if needed.

$V = 350$ $\quad V = \ell \cdot w \cdot h$

$\frac{350}{8 \cdot 15} = \frac{8 \cdot 15 \cdot h}{8 \cdot 15}$ $\quad h = 2.9$

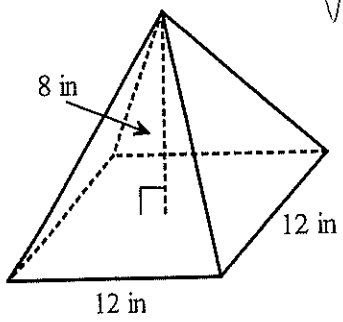
23) What is the volume of the pyramid below? The base of the pyramid is a square.

**A.** 240 $in^3$

**B.** 288 $in^3$

**C.** 336 $in^3$

**D.** 384 $in^3$




$V = \frac{1}{3}Bh$

$V = \frac{1}{3}(12 \cdot 12)(8)$

$= \frac{1}{3}1152$

$= 384\ in^3$

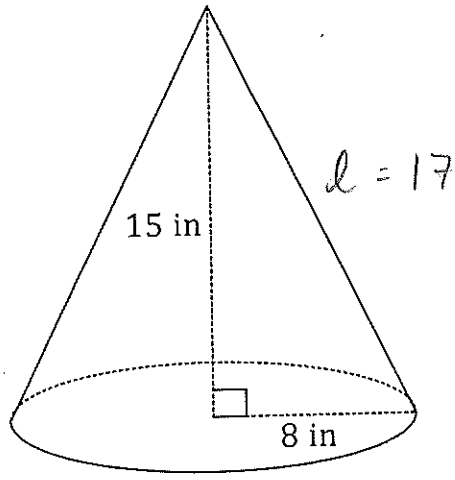
**For #24 – 25, use the cone shown below.**

24) Find the volume of the cone, rounded to one decimal place.

$V = \frac{1}{3}\pi r^2 \cdot h$

$V = \frac{1}{3}\pi(8)^2(15)$

$V = 1005.3\ in^3$




25) Find the surface area of the cone, in terms of pi.

$SA = \pi r^2 + \pi r \ell$

$SA = \pi(8)^2 + \pi(8)(17)$

$SA = 200\pi\ in^2$

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26) The surface area of a sphere is $80\pi$. Find the radius of the sphere. If needed, write your answer as a simplified radical.

$SA = 4\pi r^2$

$\frac{80\pi}{4\pi} = \frac{4\pi r^2}{4\pi}$

$\sqrt{20} = \sqrt{r^2}$

$\sqrt{20}$

$4 \cdot 5$

$2 \cdot 2$

$2\sqrt{5} = r$

27) A cube has a surface area of 150 $ft^2$. Find the volume of the cube.

$SA = 6s^2$

$150 = 6s^2$

$\sqrt{25} = \sqrt{s^2}$

$5 = s$

$V = s^3$

$V = 5^3$

$V = 125\ ft^3$

28) Find the volume of the solid shown to the right.

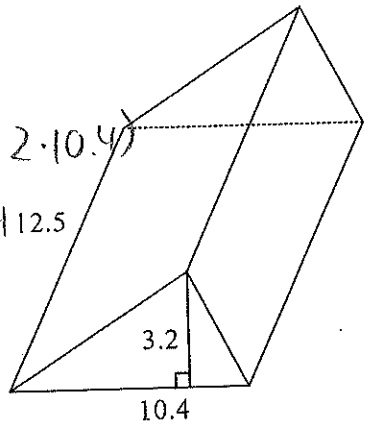
$V = Bh$

$V = 16.64 \cdot 12.5$

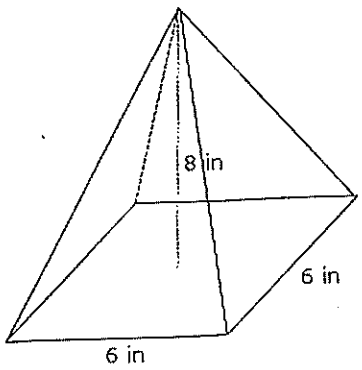
$V = 208$

$B = \frac{1}{2}(3.2 \cdot 10.4)$

$B = 16.64$ 12.5




29) Find the volume of the solid below. The base is a square.




$V = \frac{1}{3}Bh$

$V = \frac{1}{3}(6 \cdot 6)(8)$

$V = 96\ in^3$

30) A sphere has a *diameter* of 19 inches. Find the volume of the sphere, rounded to one decimal place.

$r = \frac{19}{2} = 9.5$

$V = \frac{4}{3}\pi r^3$

$V = \frac{4}{3}\pi (9.5)^3$

$V = 3591.4\ in^3$