

# Today's Objective: Review for Quarter 3 Final

Don't forget to make your half-sheet of paper notecard!

1. Referring to Figure A, find the measure of  $\angle D$ .

$$\frac{112}{2} = 56^\circ$$

2. Referring to Figure A, find the measure of  $\angle E$ .

$$\frac{134}{2} = 67^\circ$$

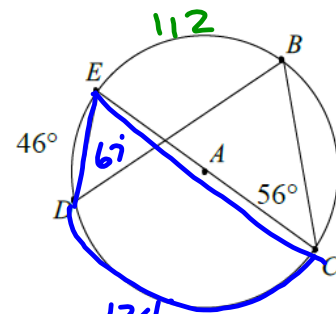
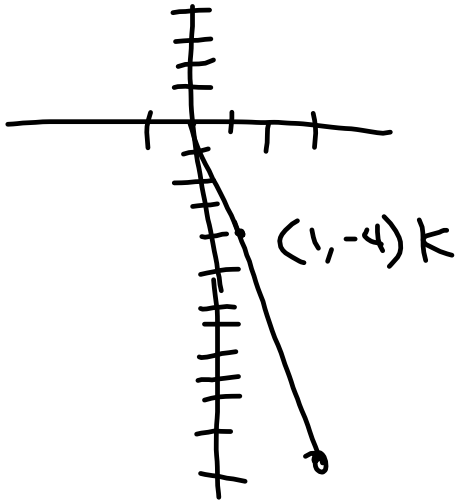


Figure A with diameter  $\overline{EC}$ .

3. Point  $K(1, -4)$  is dilated with center at the origin and a scale factor of 3. Where is  $K'$ ?



$$K'(1 \cdot 3, -4 \cdot 3)$$

$$K'(3, -12)$$

SOH CAH TOA

4. Referring to Figure B, find  $PQ$ .

$$a^2 + 3^2 = 13^2$$

$$4\sqrt{10}$$

$$a^2 + 9 = 169$$

$$\sqrt{a^2} = \sqrt{160}$$

5. Referring to Figure B, find  $\sin P$ .

$$\frac{3}{13}$$

$$\frac{0}{\pi}$$

$$\frac{16}{44} \quad \frac{10}{52}$$

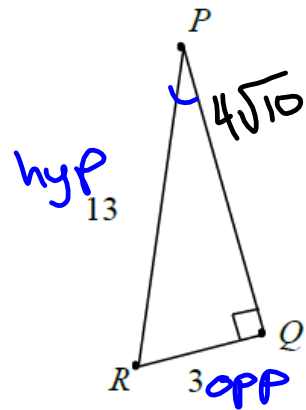


Figure B

6. If  $\triangle XYZ \sim \triangle JKL$ ,  $m\angle X = 30^\circ$ , and  $m\angle Y = 50^\circ$ , find  $m\angle L$ .

$$x + y + z = 180$$

$$\angle L \cong \angle Z$$

$$z = 180 - 30 - 50 = 100^\circ$$

$$m\angle L = 100^\circ$$

7. If  $\triangle XYZ \sim \triangle JKL$ ,  $XY = 15$  cm,  $XZ = 10$  cm, and  $JK = 20$  cm, find  $JL$ .

$$\frac{XY}{JK} = \frac{XZ}{JL}$$

$$\frac{15}{20} = \frac{10}{x}$$

$$x = 13.\bar{3} = JL$$

$$10 \cdot \frac{20}{15} = \frac{x}{10} \cdot 10$$

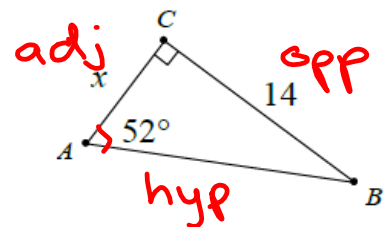
8. Fill in the blank to make the equation true:  $\sin 65^\circ = \cos$  25<sup>°</sup>

$$\cos A = \sin B \quad \text{if } A + B = 90$$

$$90 - 65 = 25^\circ$$

SOH CAH TOA

9. In the triangle at the right, solve for  $x$ .

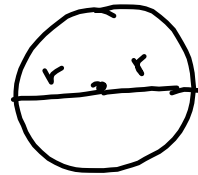


$$\tan(52) = \frac{14}{x}$$

Switcheroo!

$$x = \frac{14}{\tan(52)} = 10.9$$

10. Find the volume of a sphere with diameter 5 cm.



$$V_{\text{sphere}} = \frac{4}{3} \pi r^3$$

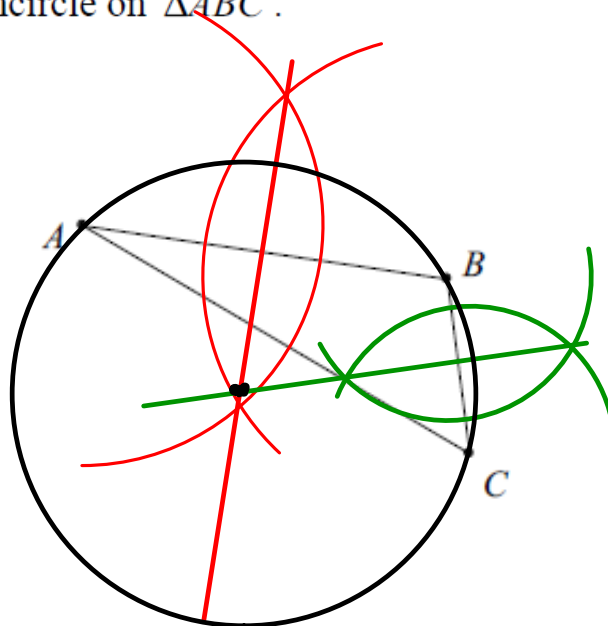
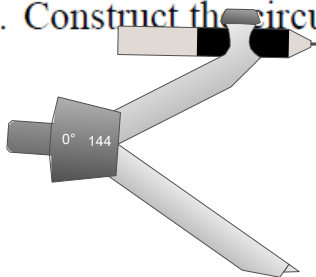
$$r = \frac{5}{2} = 2.5$$

$$\frac{4}{3} \pi (2.5)^3 = 65.44 \text{ cm}^3$$

11. Find the volume of a cylinder with radius 5 cm and height 7 cm.

$$V = \pi r^2 h = \pi (5)^2 (7) = 549.77 \text{ cm}^3$$

12. Construct the circumcircle on  $\triangle ABC$ .



13. What is the length of the radius of the circle given by the equation:  $(x-4)^2 + (y+4)^2 = 36$

$$(4, -4) \quad r = 6$$

$$(x-h)^2 + (y-k)^2 = r^2$$

$$\sqrt{r^2} = \sqrt{36}$$

14. The measure of  $\widehat{AB}$  is  $20^\circ$  on a circle with a radius measuring 5cm. Find the arclength of  $AB$ .

$$L = \frac{\pi r \theta}{180} = \frac{\pi (5) (20)}{180}$$

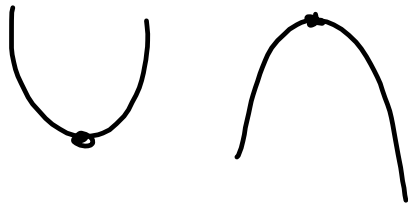
$$L = 1.74 \text{ cm}$$

15. Simplify the following radical:  $\sqrt{45}$

$$\begin{array}{c} \sqrt{45} \\ \wedge \\ \textcircled{5} \quad 9 \\ \quad \wedge \\ \quad \boxed{\textcircled{3} \textcircled{3}} \end{array}$$

$$\textcircled{3\sqrt{5}}$$

16. Identify the vertex of the function:  $f(x) = (x+3)^2 - 7$



$$\boxed{(-3, -7)}$$

opp ↓ same ↓

17. For  $f(x)$  defined in the previous problem, find  $f(-5)$ .

$$f(\underline{x}) = (\underline{x} + 3)^2 - 7$$

$$f(\underline{-5}) = (\underline{-5} + 3)^2 - 7 = \boxed{-3}$$



18. Given the following equation  $3V = \frac{1}{3}Bh$ , solve for  $h$ .

$$h = \frac{3V}{B}$$

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

19. Multiply.

$$(x+2)(3x+8)$$

$$3x^2 + 8x + 6x + 16$$

$$3x^2 + 14x + 16$$

20. Factor.

$$1x^2 - 11x + 24$$
$$(x-8)(x-3)$$

$$\begin{array}{ccc} & a \cdot c & \\ & 24 & \\ -8 & / & -3 \\ \hline & -11 & \end{array}$$