

Geometry B REVIEW – Short Answer

Name: _____

Directions: Answer each question to the best of your ability. Show work for maximum credit. Good luck!

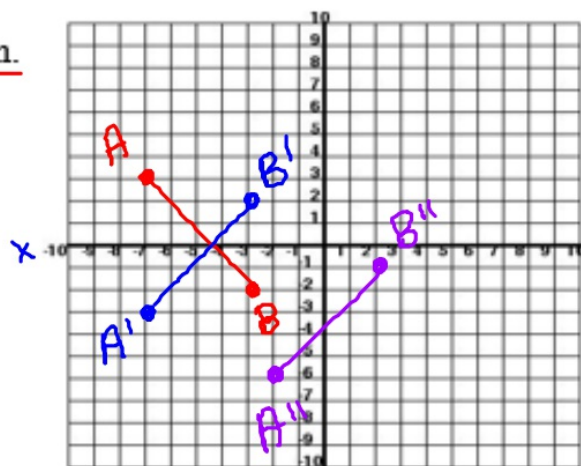
1. If $A(-7, 3)$ & $B(-3, -2)$, perform the following composition.

$$T_{\langle 5, -3 \rangle} \circ R_{x\text{-axis}}(AB)$$

#2 #1

State the coordinates of:

$$A'' = \underline{(-2, -6)} \quad B'' = \underline{(2, -1)}$$



2. Write a similarity statement for the triangles below.
Then write a statement of proportionality.
Then find k (scale factor) and x

Similarity statement: $\triangle CQT \sim \triangle CMP$

Statement of proportionality: $\frac{CQ}{CM} = \frac{QT}{MP} = \frac{TC}{PC}$

k = $\frac{3}{5}$ x = 14

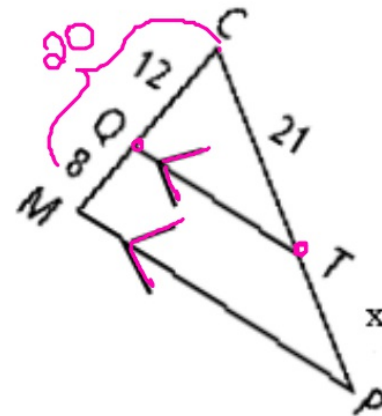
$$\frac{CQ}{CM} = \frac{12}{20} = \frac{3}{5} \checkmark$$

$$\frac{12}{8} \neq \frac{21}{x}$$

$$\frac{12x}{12} = \frac{168}{12}$$

$$x = 14$$

$$\frac{TC}{PC} = \frac{21}{35} = \frac{3}{5} \checkmark$$



3. Triangle ABC has sides with ratio 4:7:9. The perimeter of the triangle is 300 cm. Find the lengths of each side of the triangle.

$$4x + 7x + 9x = 300$$

$$\frac{20x}{20} = \frac{300}{20}$$

$$x = 15 \checkmark$$

Side lengths:

$$\underline{60}, \underline{105}, \underline{135}$$

$$4(15) = 60$$

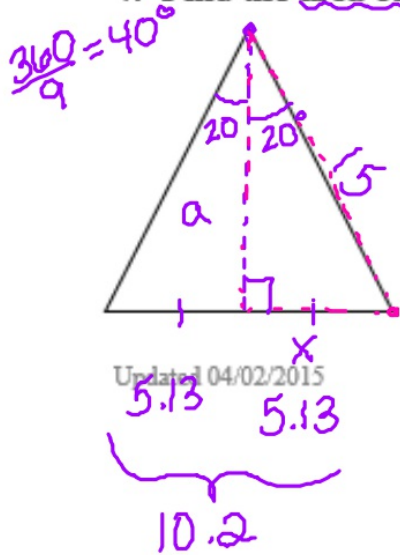
$$7(15) = 105$$

$$9(15) = 135$$

$$A = \frac{1}{2} a P$$

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4. Find the area of a regular nonagon with a radius of length 15.



$$15 \cdot \cos 20 = \frac{9}{15} \cdot 15$$

$$15(\cos 20) = a$$

$$\underline{14.1 = a}$$

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

$$15(\sin 20) = x$$

$$5.13 = x$$

$$P = 10.2 \times 9$$

$$\underline{P = 91.8}$$

$$A = \frac{1}{2} a P$$

$$A = \frac{1}{2} (14.1)(91.8)$$

Area: 647.19

Geometric Mean!

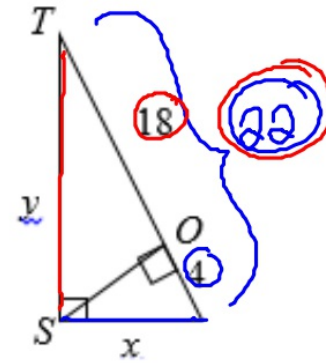
5. Use the diagram to find the values of x and y .

$$\frac{x}{4} = \frac{22}{x}$$
$$\sqrt{x^2} = \sqrt{88}$$
$$x = 9.4$$

$$x = \underline{9.4}$$

$$\frac{y}{18} = \frac{22}{y}$$
$$\sqrt{y^2} = \sqrt{396}$$
$$y = 19.9$$

$$y = \underline{19.9}$$



6. Find the height and volume of a right cylinder with a radius of 9 in. and a surface area of 1122 in^2 .

#1 #2

$$S.A. = 2B + Ch$$

$$1122 = 2(81\pi) + 18\pi(h)$$

$$1122 = 162\pi + 18\pi h$$

$$\begin{array}{r} -162\pi \\ \hline 613.1 = 18\pi h \end{array}$$

$$\frac{613.1}{18\pi} = \frac{18\pi h}{18\pi}$$

$$\boxed{10.8 = h} \quad \checkmark$$

$r=9$

$$B = \pi(9)^2 = 81\pi \quad \checkmark$$

$$C = 2\pi(9) = 18\pi$$

Volume of a cylinder

$$V = B \cdot h$$

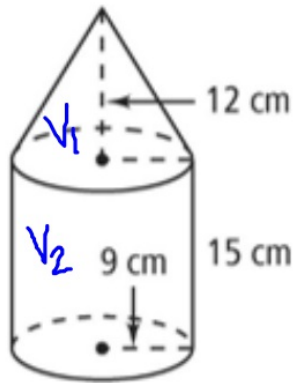
$$V = 81\pi(10.8)$$

$$\boxed{V = 2,748.3 \text{ in}^3}$$

$$h = \underline{10.8 \text{ in}^2}$$

$$V = \underline{2,748.3 \text{ in}^3}$$

7. Find the volume of the solid below.



$$V_1 = \frac{1}{3}B \cdot h$$

$$B = \pi(9)^2 = 81\pi$$

$$h = 12$$

$$V_1 = \frac{1}{3}(12)81\pi$$

$$V_1 = 324\pi \checkmark$$

$$V_2 = B \cdot h$$

$$B = 81\pi$$

$$h = 15$$

$$V_2 = 81\pi(15)$$

$$= 1,215\pi \checkmark$$

$$V = V_1 + V_2$$

$$V = 324\pi + 1,215\pi$$

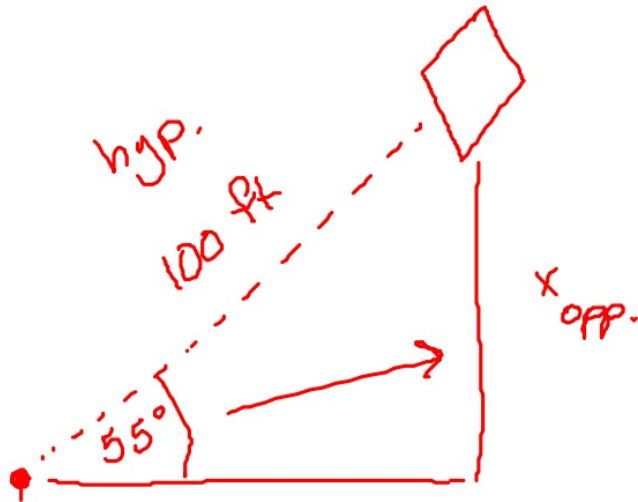
$$V = 1,539\pi \text{ OR}$$

$$\boxed{4,834.9 \text{ cm}^3}$$

Volume: 4834.9 cm³

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8. You are flying a kite and have let out 100 feet of rope and anchored the rope to a stake in the ground. You measure the angle of elevation to be 55° .
What is the height of the kite?



Height: 81.9 ft.

$$100 \cdot \sin 55 = \frac{x}{100} \cdot 100$$

$$\boxed{81.9 \text{ ft.} = x}$$