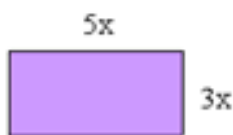


Alg FINAL EXAM REVIEW

Geometry

Name _____

1. The perimeter is 72 cm. Write an equation. Solve for x.

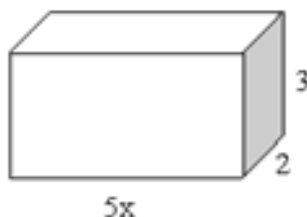


$$5x + 5x + 3x + 3x = 72$$

$$16x = 72$$

$$x = 4.5$$

2. The volume is 210 m³. Write an equation. Solve for x.



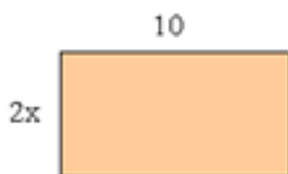
$$V = lwh$$

$$5x \cdot 2 \cdot 3 = 210$$

$$30x = 210$$

$$x = 7$$

3. The area is 140 cm². Write an equation. Solve for x.



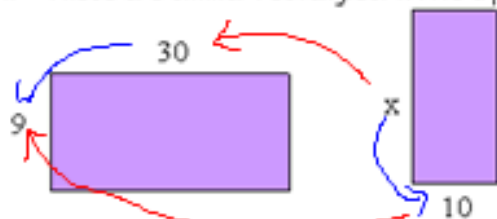
$$A = lw$$

$$2x \cdot 10 = 140$$

$$20x = 140$$

$$x = 7$$

4. These are similar rectangles. Write a proportion and solve for the variable.

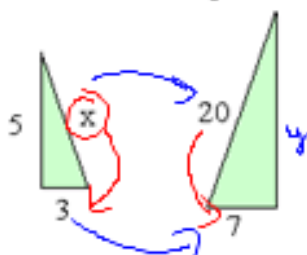


$$\frac{x}{10} = \frac{30}{9}$$

$$\frac{x}{30} = \frac{10}{9}$$

$$x = \frac{300}{9} = 33.33 \quad x = \frac{300}{9}$$

5. These are similar triangles. Write a proportion and solve for the given variable.

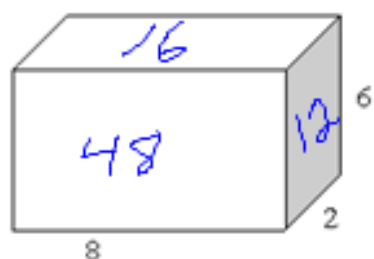


$$\frac{x}{3} = \frac{20}{7}$$

$$\frac{x}{20} = \frac{3}{7}$$

$$x = \frac{60}{7} = 8.57$$

6. Find the Surface Area. Show all work.

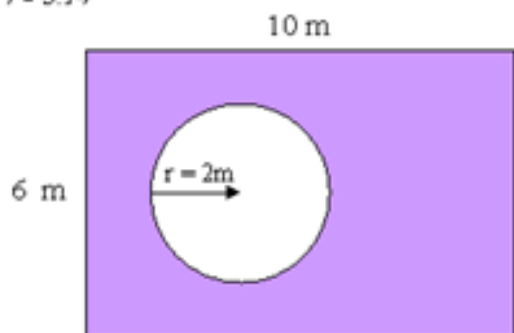


$$48 \cdot 2 + 16 \cdot 2 + 12 \cdot 2$$

$$96 + 32 + 24$$

$$152$$

7. You need to lay gravel down in the courtyard below with a fountain in it. You only need to put the gravel on the shaded area. How many square meters do you need? Write equations. Show all work. $\pi = 3.14$



$$A = lw \quad \text{subtract} \quad A = \pi r^2$$

$$= 10 \cdot 6 \quad - \quad = \pi (2)^2$$

$$= 60 \text{ m}^2 \quad = 4\pi$$

$$= 12.56 \text{ m}^2$$

$$47.44 \text{ m}^2$$

8. A coffee can has a radius of 5 cm. What is its circumference? Leave pi in your answer.



$$C = 2\pi r$$

$$C = 2\pi (5)$$

$$C = 10\pi$$

9. The circumference of a circular goat pen is 100 m. What is its radius? Leave pi in your answer.

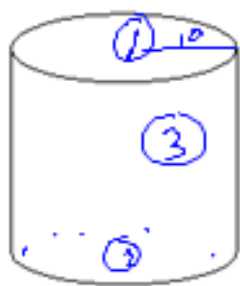


$$C = 2\pi r$$

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

$$\frac{50}{\pi} = r$$

10. What is the surface area of the cylinder with radius 10 cm and height of 30 cm?



Top & Bottom Area

$$A = \pi r^2$$

$$A = \pi (10)^2$$

$$A = 100\pi$$

$$200\pi$$

$$A = C \cdot h$$

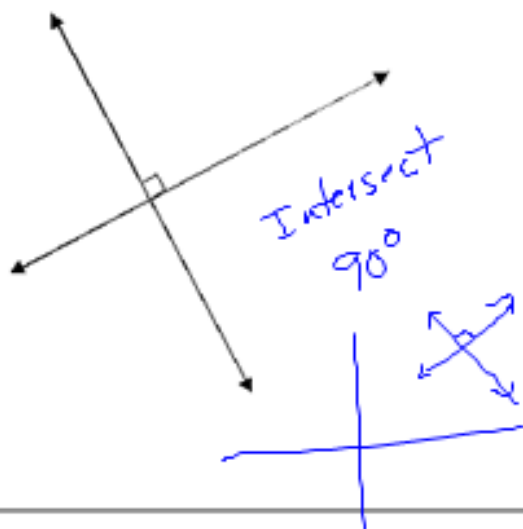
$$A = (2\pi r) \cdot 30$$

$$A = 2 \cdot \pi \cdot 10 \cdot 30$$

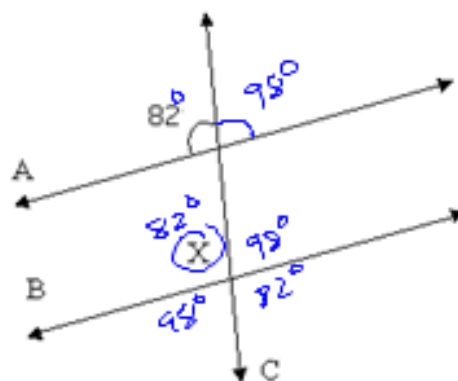
$$A = 600\pi$$

$$800\pi \text{ cm}^2$$

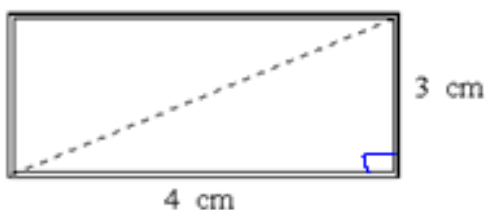
11) Explain why these lines are perpendicular.



12) Lines A and B are parallel. What is the angle of $\angle X$?

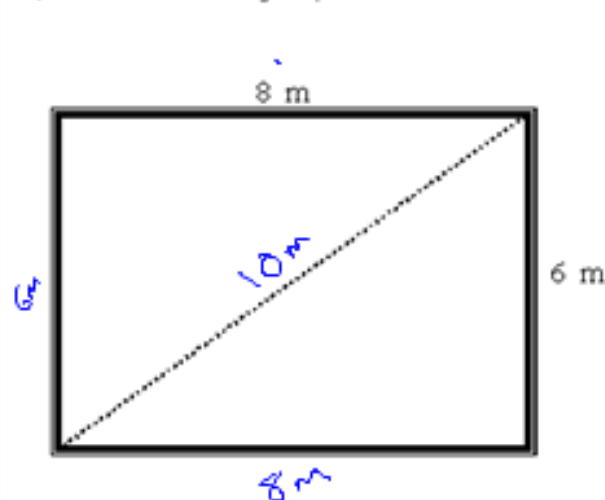


13) Use the Pythagorean Theorem to calculate the diagonal of the rectangle below.



$$\begin{aligned} a^2 + b^2 &= c^2 && c = \text{hyp.} \\ 4^2 + 3^2 &= c^2 \\ 16 + 9 &= c^2 \\ 25 &= c^2 && \boxed{c = 5 \text{ cm}} \end{aligned}$$

14) How much fencing do you need to fence the entire yard below and the diagonal barrier fence?



Outside of Rect
28 m

$$\begin{aligned} + a^2 + b^2 &= c^2 \\ 8^2 + 6^2 &= c^2 \\ 100 &= c^2 \\ c &= 10 \text{ m} \end{aligned}$$

$\boxed{38 \text{ m}}$