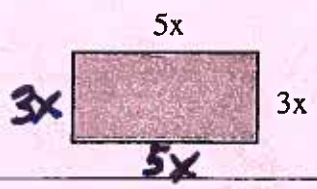
PA 2nd Trimester Test A

Name KEY

Geometry

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

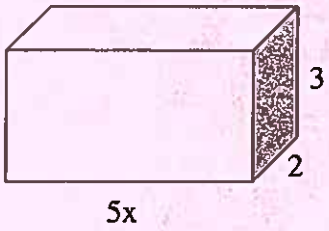


$5x+5x+3x+3x=72$

$\frac{16x}{16}=\frac{72}{16}$

$x=\frac{9}{2}$ or 4.5

2. The volume is 210 m^3 Write an equation. Solve for x.

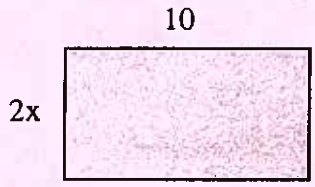


$(5x)(2)(3)=210$

$\frac{30x}{30}=\frac{210}{30}$

$x=7$

3. The area is 140 cm^2. Write an equation. Solve for x.

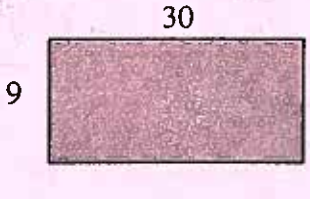


$(10)(2x)=140$

$\frac{20x}{20}=\frac{140}{20}$

$x=7$

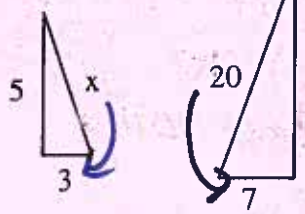
4. These are similar rectangles. Write a proportion and solve for the variable.



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

$\frac{9x}{9}=\frac{300}{9}$ $=\frac{100}{3}$ or 33.33

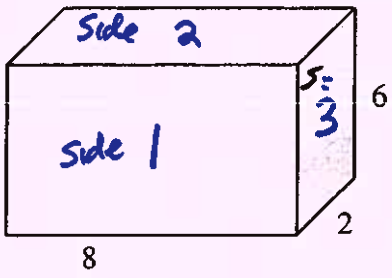
5. These are similar triangles. Write a proportion and solve for the given variable.



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

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

6. Find the Surface Area. Show all work.



Side 1: 8.6 times 2

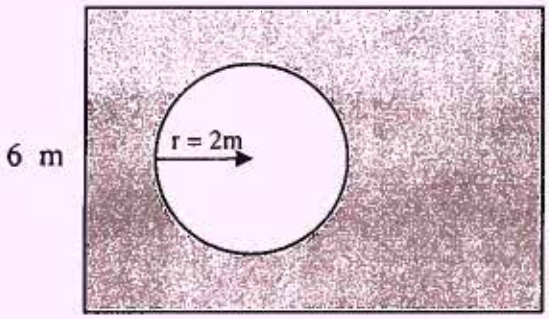
Side 2: 8.2 times 2

Side 3: 6.2 times 2

96 + 32 + 24

= 152 u²

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

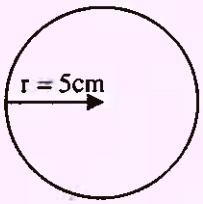


Rect
$A = lw$
$= 10 \cdot 6$
$= 60 m^2$

Circle
$A = \pi r^2$
$= \pi (2)^2$
$= 4\pi$
$= 4(3.14)$
$= 12.56$

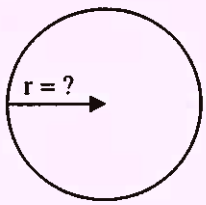
$60 - 12.56$
$= 47.44 m^2$

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



$C = 2\pi r$
$C = 2\pi (5)$
$= 10\pi$

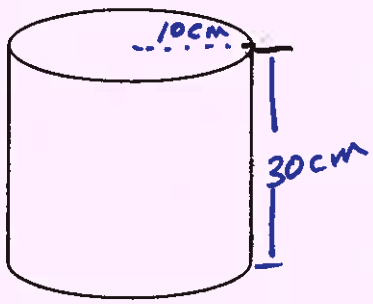
9. The circumference of a circular goat pen is 100 m. What is its radius? Leave pi in your answer.



$C = 2\pi r$
$\frac{100}{2\pi} = \frac{2\pi r}{2\pi}$
$r = \frac{50}{\pi}$ m

$\frac{50}{\pi}$ m

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

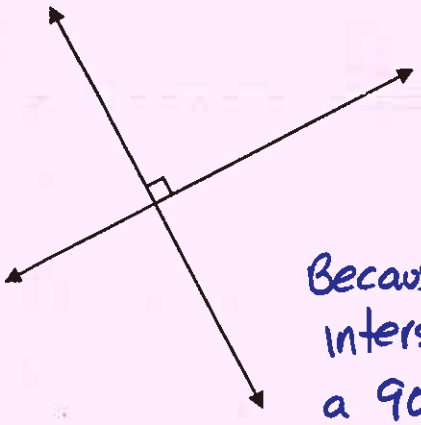


Top + Bottom
$A = \pi r^2$
$= \pi (10)^2$
$= 100\pi$

Side
$C = 2\pi r$
$= 2\pi (10)$
$= 20\pi$
$A = lw$
$= 30(20\pi)$
$= 600\pi$

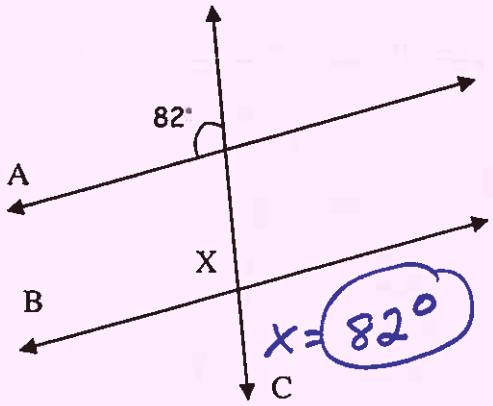
600π cm²

11) Explain why these lines are perpendicular.



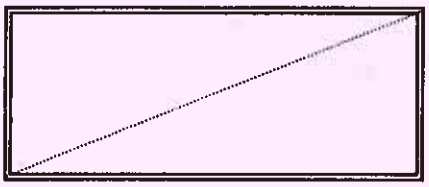
Because they intersect at a 90° Angle

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



$X = 82^\circ$

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



$a^2+b^2=c^2$

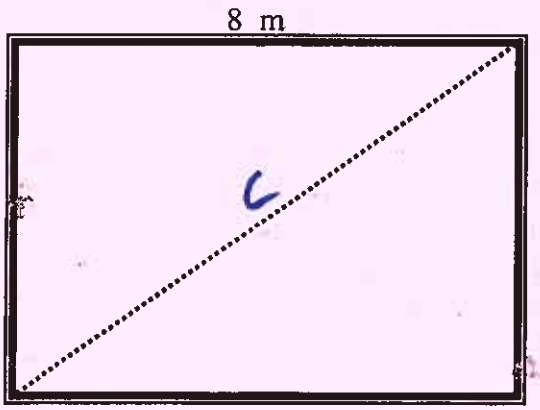
$4^2+3^2=c^2$

$16+9=c^2$

$25=c^2$

$c=5$

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



Perimeter of Rectangle

$P=8+8+6+6$

$=28\text{ m}$

Diagonal

$6^2+8^2=c^2$

$36+64=c^2$

$100=c^2$

$c=10$

$28+10=38\text{m}$