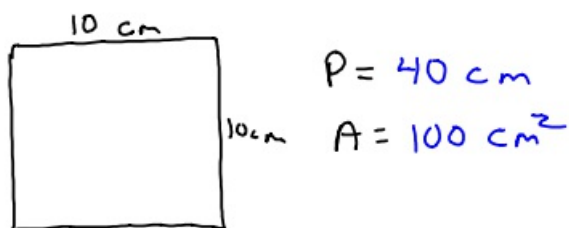


9-19-17 5<sup>th</sup> Geo

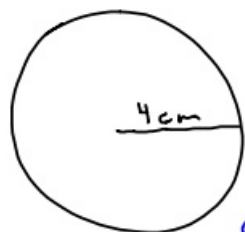
Places we use area?

① Perimeter vs. Circumference

② Perimeter vs. Area



③



$$C = \pi \cdot d$$

$$A = \pi r^2$$

$$C = \pi \cdot 8 \approx 25.1 \text{ cm}$$

$$A = \pi \cdot 4^2 = 16\pi$$

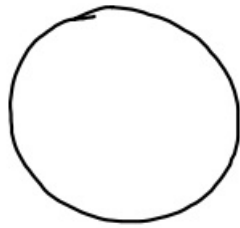
$$\approx 50.3 \text{ cm}^2$$

④ Perimeter of a triangle with sides of  $n+2$ ,  $n+4$ , and  $2n-3$  is 23. What is the longest side length?



$$\begin{aligned} n+2+n+4+2n-3 &= 23 \\ 4n+3 &= 23 \\ -3 & \quad -3 \\ \hline 4n &= 20 \\ n &= 5 \end{aligned}$$

④



Area of circle  
is  $153.938 \text{ cm}^2$ .  
What is the  
diameter?

$$A = \pi \cdot r^2$$

$$\downarrow$$
$$\frac{153.938}{\pi} = \frac{\pi \cdot r^2}{\pi}$$

$$49 = r^2$$

$$r = 7 \quad \therefore \text{diameter} = 14 \text{ cm}$$

⑤

Circumference of a circle  
is  $376.9911 \text{ cm}$ . What is  
the area?

$$C = \pi \cdot d$$

$$\downarrow$$
$$\frac{376.9911}{\pi} = \frac{\pi \cdot d}{\pi}$$

$$d = 120$$

$$\therefore r = 60$$

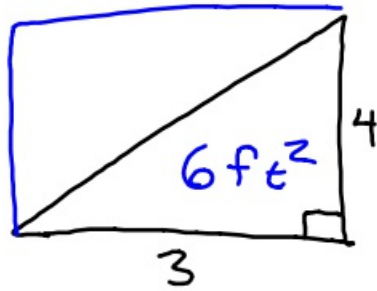
$$A = \pi \cdot r^2$$

$$= \pi \cdot 60^2$$

$$= \pi \cdot 3600$$

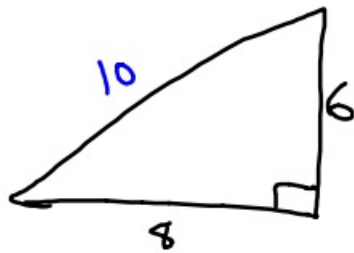
$$\approx 11,310 \text{ cm}^2$$

⑥ Area = ?



$$A = \frac{1}{2} \cdot b \cdot h$$

⑦

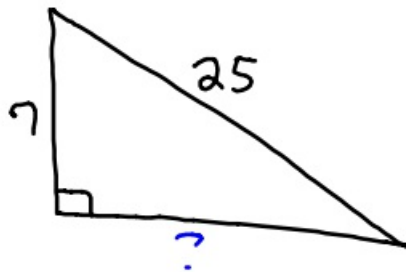


What is the perimeter?

$$8^2 + 6^2 = c^2$$
$$c = 10$$

$$P = 10 + 6 + 8$$
$$= 24 \text{ cm}$$

⑧



Perimeter = ?

$$7^2 + b^2 = 25^2$$

$$49 + b^2 = 625$$
$$\begin{array}{r} -49 \\ -49 \end{array}$$

$$\sqrt{b^2} = \sqrt{676}$$

$$b = 24$$

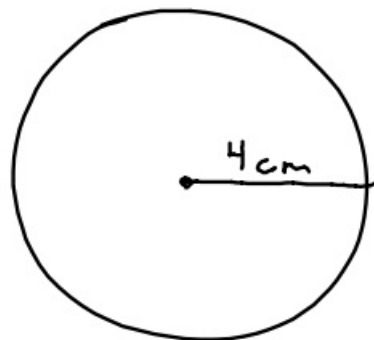
$$\therefore P = 24 + 7 + 25 = 56 \text{ cm}$$

9-19-17 6<sup>th</sup> Geo

Where do we use  
area in real life?

Perimeter vs. Circumference  
↓ ↓  
Polygons Circle

Perimeter vs. Area  
cm cm<sup>2</sup>

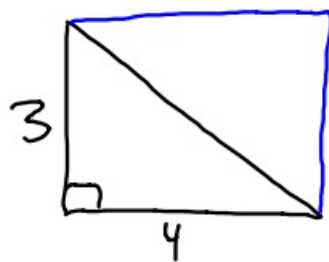


$$C = ? \pi d$$

$$A = ? \pi \cdot r^2$$

$$C = \pi \cdot 8 = 25.1 \text{ cm}$$

$$A = \pi \cdot 4^2 = 16\pi \approx 50.3 \text{ cm}^2$$



$$\text{Area} = ?$$

$$6 \text{ cm}^2$$

$$A = \frac{1}{2} bh$$

- ① What is the longest leg length in a triangle that has a perimeter of 20 and side lengths of  $n+3$ ,  $n+4$ , and  $2n-3$ ?

$n+3$        $n+4$        $2n-3$   
 $P=20$   
 $n+4$   
 $n+3 + n+4 + 2n-3 = 20$   
 $4n+4 = 20$   
 $\quad -4 \quad -4$   


---

 $4n = 16$   
 $n = 4$

- ② The area of a circle is  $615.752 \text{ cm}^2$ . What is the diameter?

$$A = \pi r^2$$

↓

$$\frac{615.752}{\pi} = \frac{\pi}{\pi} \cdot r^2$$

$$\sqrt{146} = \sqrt{r^2}$$

$$r = 14$$

$$\therefore d = 28$$

- ③ The circumference of a circle is 62.83185 cm. What is the area of the circle?

$$C = \pi \cdot d$$

$$\downarrow$$

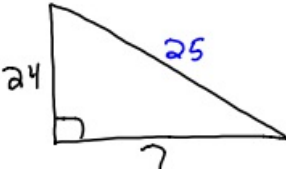
$$\frac{62.83185}{\pi} = \frac{\pi \cdot d}{\pi}$$

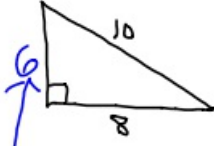
$$d = 20$$

$$A = \pi \cdot r^2$$

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

$$A = 100\pi \approx 314.16 \text{ cm}^2$$

- ④  What is the perimeter?
- $$P = 7 + 24 + 25 = 56 \text{ cm}$$
- $$a^2 + b^2 = c^2$$
- $$7^2 + 24^2 = c^2$$
- $$625 = c^2$$
- $$25 = c$$

- ⑤  P = ?
- $$P = 6 + 8 + 10 = 24$$
- $$a^2 + b^2 = c^2$$
- $$8^2 + b^2 = 10^2$$
- $$64 + b^2 = 100$$
- $$b^2 = 36$$
- $$b = 6$$

