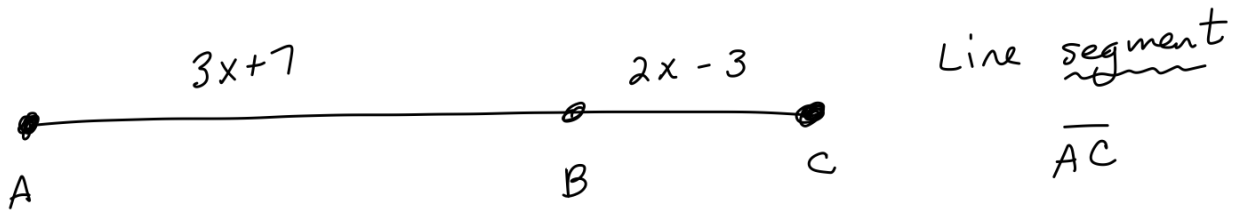


TH-6 Geometry Week 4



Idea $\left[\overline{AB} + \overline{BC} = \overline{AC} \right]$ [segment addition postulate]

$$\overline{AC} = 34$$

$$3x + 7 + 2x - 3 = 34$$

x =

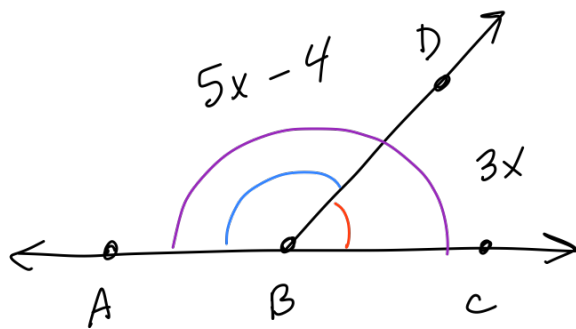
$$\begin{array}{r} 5x + 4 = 34 \\ -4 \quad -4 \end{array}$$

$$\boxed{x = 6}$$

$$\frac{5x}{5} = \frac{30}{5}$$

[angle addition postulate]

$$\left[\angle ABD + \angle DBC = \angle ABC \right]$$



$$5x - 4 + 3x = 180$$

$$\begin{array}{r} 8x - 4 = 180 \\ +4 \quad +4 \end{array}$$

$$\frac{8x}{8} = \frac{184}{8}$$

$$\boxed{x = 23}$$

Distance Formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Find distance between

$$\begin{array}{cc} (1, 2) & (-5, -6) \\ \uparrow \uparrow & \uparrow \uparrow \\ x_1, y_1 & x_2, y_2 \end{array}$$

$$\begin{aligned} d &= \sqrt{(-5 - 1)^2 + (-6 - 2)^2} \\ &= \sqrt{(-6)^2 + (-8)^2} \\ &= \sqrt{36 + 64} = \sqrt{100} \\ &= \boxed{10} \end{aligned}$$

Midpoint Formula

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Averages

Find midpoint between (1, 2) and (-5, -6)

$$\left(\frac{1 + (-5)}{2}, \frac{2 + (-6)}{2} \right)$$

$$\left(\frac{-4}{2}, \frac{-4}{2} \right)$$

$$\boxed{(-2, -2)}$$

Find the distance between
 (x_1, y_1) and (x_2, y_2)
 $(6, 8)$ and $(1, -4)$

$$\begin{aligned}d &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\&= \sqrt{(1 - 6)^2 + (-4 - 8)^2} \\&= \sqrt{(-5)^2 + (-12)^2} \\&= \sqrt{25 + 144} = \sqrt{169} = \boxed{13}\end{aligned}$$

Find the midpoint
between

$(2, -7)$ and $(-6, 3)$

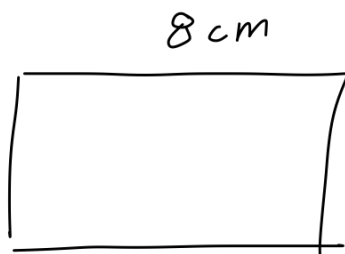
$$\begin{aligned}&\left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right) \\&\left(\frac{2 + (-6)}{2}, \frac{-7 + 3}{2} \right) \\&\left(\frac{-4}{2}, \frac{-4}{2} \right) \\&(-2, -2)\end{aligned}$$

1-7 Perimeter, Circumference, and Area

Area Rectangle

$$A = (\text{base})(\text{height})$$

$$A = bh$$

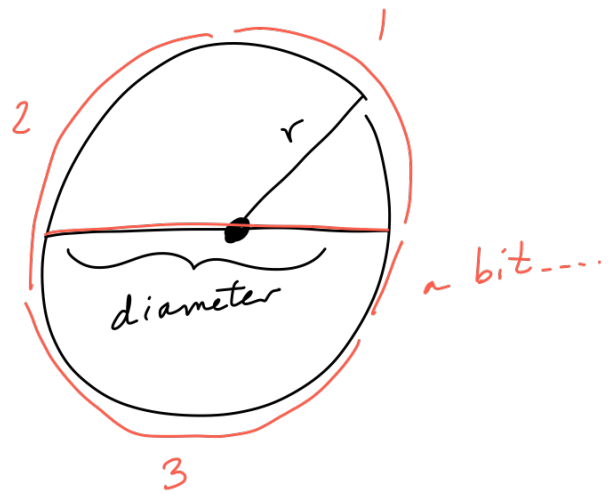


$$A = (8\text{cm})(6\text{cm}) = \boxed{48\text{cm}^2}$$

two dimensions

Circumference
perimeter of a circle

π represents the
number of times
the diameter can wrap
around a circle.



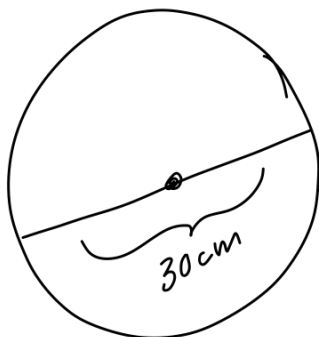
$$\text{Circumference} = \text{diameter} \times \pi$$

$$C = \pi d$$

$$C = 2\pi r$$

$$d = 2r$$

1.)



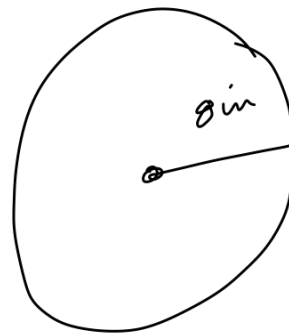
" 30π "

$$C = \pi d$$

$$= \pi(30\text{cm})$$

$$\boxed{30\pi \text{ cm}}$$

2.)



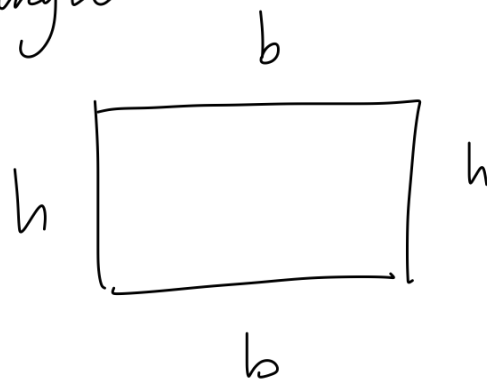
$$C = 2\pi r$$

$$= 2\pi(8\text{in})$$

$$\boxed{16\pi \text{ in}}$$

Perimeter of Rectangle

$$P = 2b + 2h$$



sum of all sides



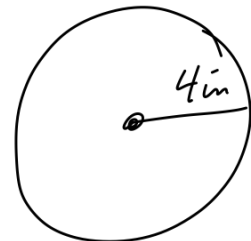
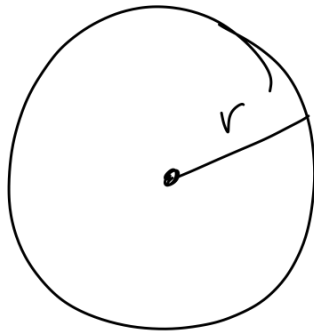
$$P = (8)2 + (12)2$$

$$= 16 + 24$$

$$= 40 \text{ in}$$

Area of Circle

$$A = \pi r^2$$

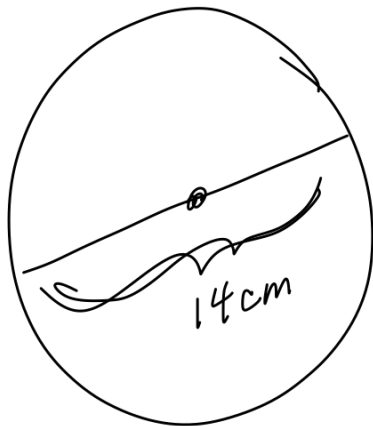


$$A = \pi r^2$$

$$\pi (4 \text{ in})^2$$

$$= 16\pi \text{ in}^2$$

look!



$$d = 2r$$

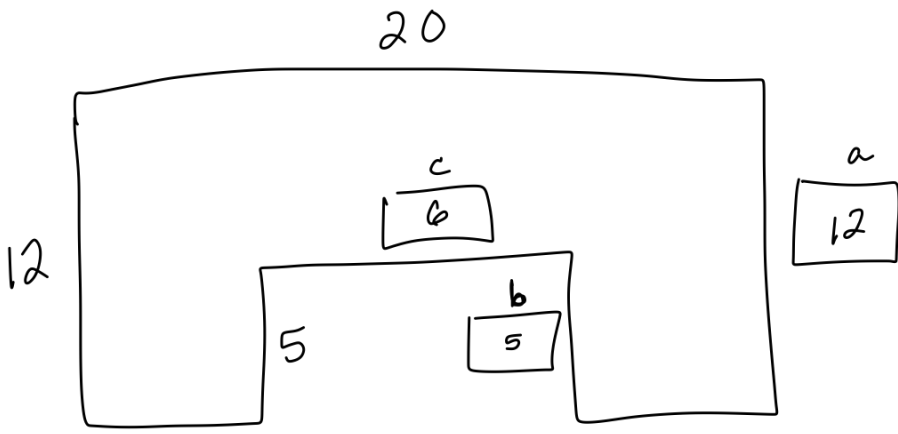
$$\frac{14 \text{ cm}}{2} = \frac{2r}{2}$$

$$7 \text{ cm} = r$$

$$A = \pi r^2$$

$$\pi (7 \text{ cm})^2$$

$$= 49\pi \text{ cm}^2$$



Perimeter $\frac{1}{2}$
Area of Irregular Objects

$$P = 20 + 12 + 6 + 5 + 6 + 5 + 8 + 12$$

$\frac{24}{6+5}$
 $\frac{10}{6+5}$
 $\frac{20}{8+12}$

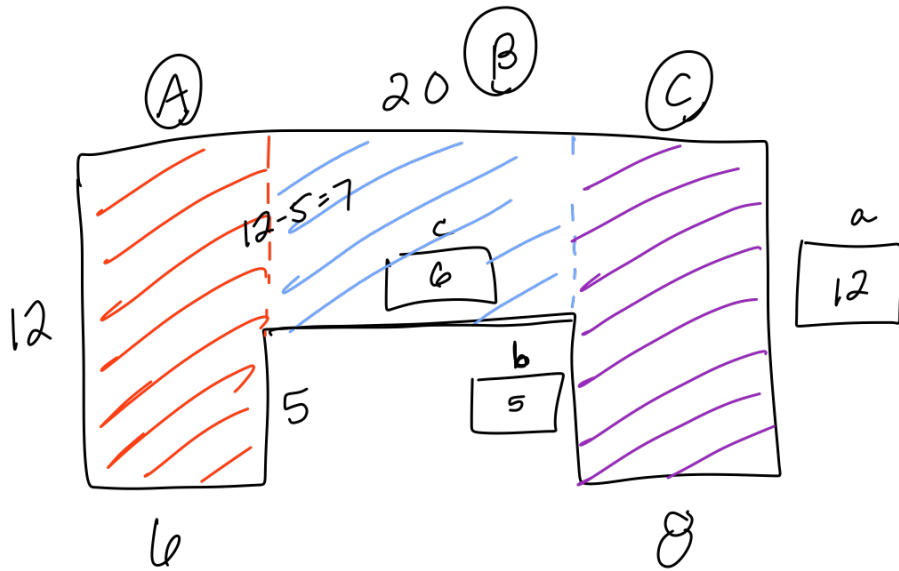
74

$$6 + c + 8 = 20$$

$$14 + c = 20$$

$$\begin{array}{r} -14 \\ \hline c = 6 \end{array}$$

Not drawn to scale



2 strats \rightarrow
1.) Add what is there —

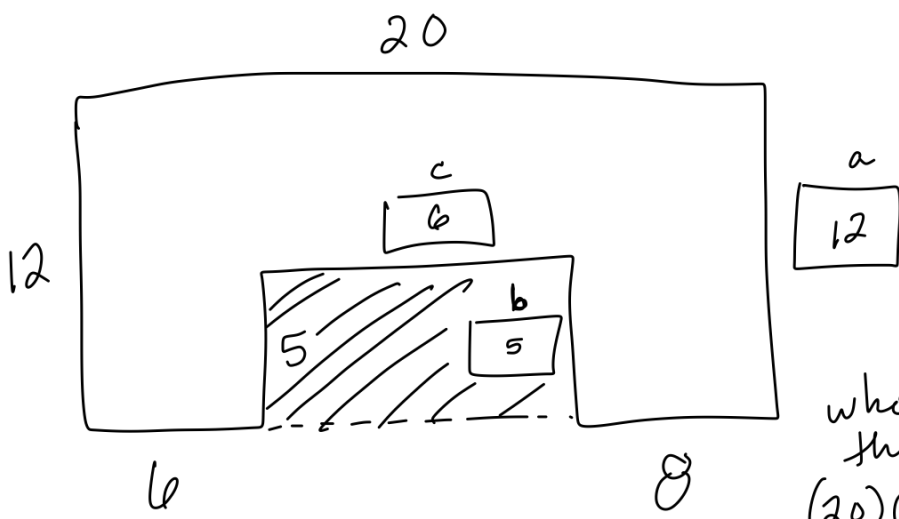
Area

(A) $(12)(6) = 72$

(B) $(7)(6) = 42$

(C) $(8)(12) = 96$

total **210**



2nd Strat \rightarrow
Subtract what isn't there —

whole thing - Hole thing

$$(20)(12) - (6)(5) = 240 - 30 = 210$$

210

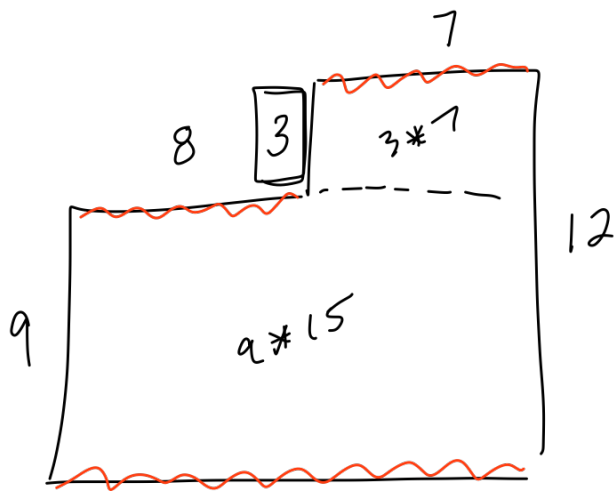


Figure Drawn to Scale Absolutely. Prove me wrong!

Perimeter

Area

$$\text{Perimeter: } 12 + 7 + 3 + 8 + 9 + 9 + 7$$

$$30 \quad 39 + 15 = \textcircled{54} \text{ units}$$

$$\text{Area: } (3)(7) + (9)(15)$$

$$21 + 135 = \boxed{156} \text{ units}^2$$

Quiz 2 due tonight HW 1-7 evens
 Quiz 3 due Sep 24th Online HW 1-7 + Review due Oct 1st
 Quiz 4 1-7
 Ch 1 Pre-Test
 Ch 1 Test due Oct 1st