

Announcements

- Last day for course evaluations (DSC Email)
- Retesting next week (12/13-12/15)
- Spring 2022 Registration is now open

① $(x_1, y_1), (x_2, y_2), (-5, 0), (15, 8)$

* Infinitely many points on a line
* The line itself extends infinitely
* $(5, 2)$ is NOT on the line

② $y = mx + b$ * Equation for a line
(Slope-Intercept form)

- Variable m is called the slope
- Variable b is called the y -intercept

③ To find the slope we use another formula:

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

* Pick 2 points and label them:

(x_1, y_1) and (x_2, y_2)

$(10, 6)$ $(20, 10)$

$$m = \frac{10 - 6}{20 - 10} = \frac{4}{10} = \frac{2}{5}$$

$$m = \frac{2}{5} \quad * \text{Slope}$$

④ y-intercept \rightarrow The y-coordinate of the point where the line crosses the y-axis

$$\begin{matrix} (0, 2) \\ (x, y) \end{matrix}$$

$$b = 2$$

⑤ $y = mx + b$

$$y = \frac{2}{5}x + 2$$

$$\begin{matrix} (0, 2) \\ (1, \end{matrix}$$

⑥ To check if true \rightarrow LHS = RHS

* pick a point $(25, 12)$

$$x = 25, y = 12$$

$$y = \frac{2}{5}x + 2$$

$$12 = \frac{2}{5}(25) + 2 = 12 \checkmark$$

$$\rightarrow \frac{2 \cdot 25}{5} = \frac{50}{5} = 10$$

- Formulas : Slope - Intercept form : $y = mx + b$
Slope formula : $m = \frac{y_2 - y_1}{x_2 - x_1}$
- 2 points that are on the line
- y-intercept

$$\textcircled{1} \quad y = \frac{2}{5}x + 2$$

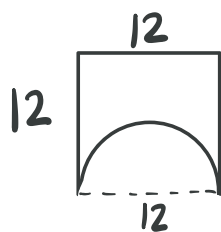
$$\begin{matrix} (x, y) \\ (10, 6) \end{matrix}$$

$$\textcircled{2} \quad y = \frac{5}{2}x + 2$$

$$y = \frac{2}{5}x - 2$$

⋮

2



(1) Circle & Square



$$A = \pi r^2$$

(2) \cdot r is the radius = 6

$$A = \pi 6^2$$



$$A = l \cdot w$$

$$= 12 \cdot 12$$

$$= 12^2$$

(3) Subtraction: $12^2 - \pi(6)^2$

$$(4) 12^2 - \pi(6)^2 = 144 - \pi(6)^2$$

$$= 144 - \pi 36$$

$$= -\pi(6)^2 + 12^2 = 12^2 - \pi(6)^2$$

(A) $12^2 - \pi(6)$

(B) $12^2 - \pi(12)^2$

(C) $2 \cdot 12 - \pi(12)^2$

(D) $12^2 - \pi(6)^2$