DAY 7 - More Finding the Equation

ind equation of lines given two points

1. $(-3, -1)$ and $(0, -2)$ y-int

$m = \frac{-2--1}{0--3}$

$= \frac{-1}{3}$

$y = mx + b$

$\therefore y = -\frac{1}{3}x - 2$ ..

2. $(0, 5)$ and $(-2, -4)$

y-int

$m = \frac{-4-5}{-2-0}$

$= \frac{-9}{-2}$

$= 9/2$ ..

$\therefore y = \frac{9}{2}x + 5$.

3. $(-5, 4)$ and $(-6, 0)$

$m = \frac{0-4}{-6--5}$

$= \frac{-4}{-1}$

$= 4$ ..

$y = mx + b$

$0 = 4(-6) + b$

$24 = b$ ..

$\therefore y = 4x + 24$.

4. $(2, 7)$ and $(3, 10)$

$m = \frac{10-7}{3-2}$

$= \frac{3}{1}$ ..

$y = mx + b$

$10 = \frac{3}{1}(3) + b$

$10 = 9 + b$

$1 = b$ ..

$\therefore y = 3x + 1$.

5. $(4,5)$ and $(8, 3)$

$m = \frac{3-5}{8-4}$

$= \frac{-2}{4}$

$= \frac{-1}{2}$ ..

$y = mx + b$

$3 = \frac{-1}{2}(8) + b$

$3 = -4 + b$

$7 = b$ ..

$\therefore y = \frac{-1}{2}x + 7$.

6. $(3,6)$ and $(-9, 5)$

$m = \frac{5-6}{-9-3}$

$= \frac{-1}{-12}$ ..

$y = mx + b$

$5 = \frac{1}{12}(-9) + b$

$5 = -\frac{9}{12} + b$

$5 = \frac{3}{4} + b$

$4 \cdot \frac{5}{1} + \frac{3}{4} = b$ ..

$\frac{23}{4} = b$

$-0.8 + 5.75 = 23/4$

Find the equation of the line

7. slope: 3, y-intercept: 8

$y = 3x + 8$

8. $m = 0.5$, G(0, 5) y-int

$y = 0.5x + 5$

9. $m = 3$, F(−4, −5)

$y = 3x + b$

$-5 = 3(-4) + b$

$-5 = -12 + b$

$7 = b$ ..

$\therefore y = 3x + 7$

10. $m = -\frac{3}{2}$, H(−3, 0)

$y = \frac{-3}{2}x + b$

$0 = \frac{-3}{2}(-3) + b$

$0 = \frac{9}{2} + b$

$-\frac{9}{2} = b$ ..

$\therefore y = -\frac{3}{2}x - \frac{9}{2}$

8

Write the equation from a word problem. Don't forget to do let statements

11. A machine salesperson earns a base salary of $40,000 plus a commission of $300 for every machine he sells. Write an equation

let x be # of machines sold
let y be total salary

$y = 300x + 40\,000$

12. Lin is tracking the progress of her plant's growth. Today the plant is 5 cm high. The plant grows 1.5 cm per day.

let x be # of days
let y be height of plant

$y = 1.5x + 5$

13. Mr. Thompson is on a diet. He currently weighs 260 pounds. He loses 4 pounds per month.

5×2

let x be # of months
let y be total weight

$y = -4x + 260$

14. Paul opens a savings account with $350. He saves $150 per month.

let x be # of months
let y be total savings

$y = 150x + 350$

15. The population of Bay Village is 35,000 today. Every year the population of Bay Village increases by 750 people.

let x be # of yrs
let y be total population

$y = 750x + 35\,000$

18