

Unit 2 Review * DVE on Review Day *

State if the following tables have a constant rate of change. If so, find the constant rate of change. If not, explain why.

1.

Hours	Miles
1	46
2	92
3	138
4	184

Yes. $CROC = 46 \text{ mph}$

2.

Minutes	Dollars (\$)
15	5
30	9
45	13
60	15

NO constant rate of change.

3.

Seconds	Feet
10	53
12	57
15	63
19	71

Yes. $CROC = \frac{2 \text{ feet}}{1 \text{ second}}$

4. Does problem #1 show a proportional relationship? Explain.

Yes $\frac{46}{1} = \frac{92}{2} = \frac{138}{3} = \frac{184}{4}$
 $46 = 46 = 46 = 46$

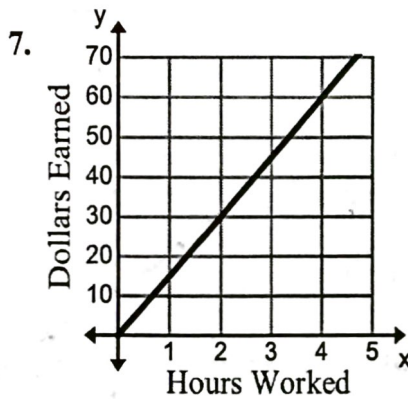
5. Does problem #2 show a proportional relationship? Explain.

NO. $\frac{5}{15} \neq \frac{9}{30} \neq \frac{13}{45} \neq \frac{15}{60}$
 $\frac{y}{x}$ is NOT the same.

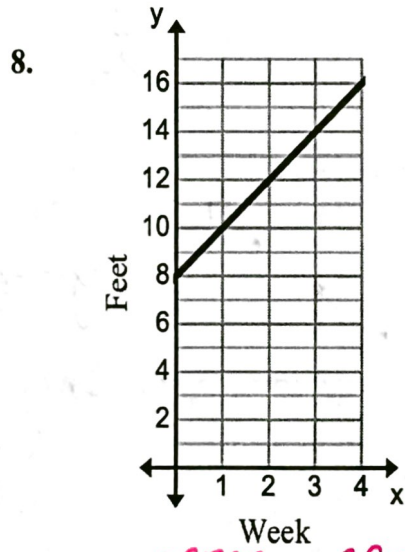
6. Does problem #3 show a proportional relationship? Explain.

NO. $\frac{53}{10} \neq \frac{57}{12} \neq \frac{63}{15} \neq \frac{71}{19}$
 $\frac{y}{x} \neq \text{the same thing}$

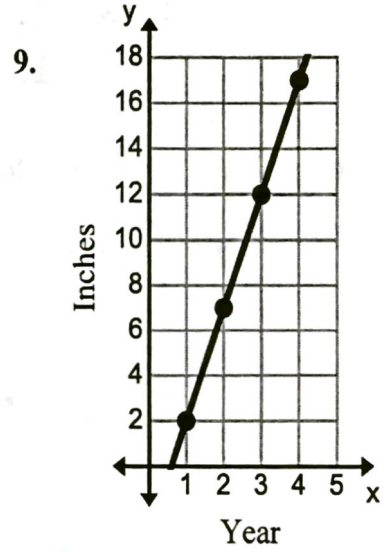
Find the constant rate of change from the graphs below. State if the graphs show a proportional relationship. Explain.



- $CROC = \frac{\$15 \text{ earned}}{1 \text{ hr worked}}$
- Yes, Proportional
- Because it goes through (0,0)



- $CROC = 2 \text{ feet/1 week}$
- Not proportional
- Does NOT cross the origin



- $CROC = 5 \text{ inches per year}$
- Not proportional
- Does NOT cross through (0,0)

Find the constant rate of change given each situation.

10. A cell phone plan is \$40 a month for 800 minutes.

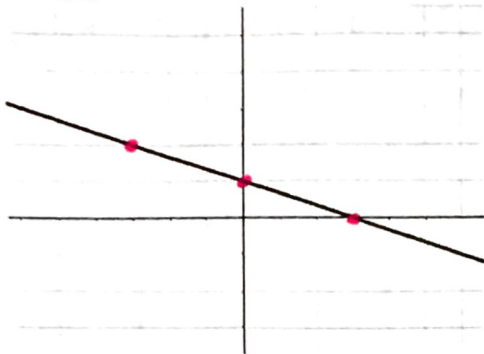
$\frac{\$0.05}{1 \text{ minute}}$

11. You got paid \$450 for 12 hours.

$\frac{\$37.50}{1 \text{ hour}}$

For each graph state the following information:

12.



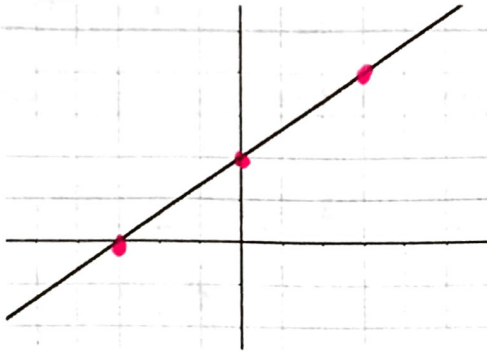
x-intercept: (3,0)

y-intercept: (0,1)

slope: $-\frac{1}{3}$

equation: $y = -\frac{1}{3}x + 1$

13.



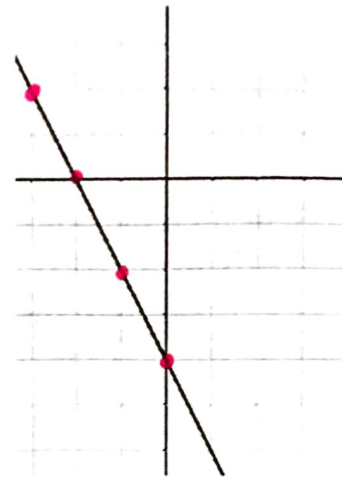
x-intercept: (-3,0)

y-intercept: (0,2)

slope: $\frac{2}{3}$

equation: $y = \frac{2}{3}x + 2$

14.



x-intercept: (-2,0)

y-intercept: (0,-4)

slope: -2 or $-\frac{2}{1}$

equation: $y = -2x - 4$

Find the slope of the line through the following points using the slope formula.

15. (3,6), (1,4)

1 or $\frac{1}{1}$

16. (-2,4), (2,10)

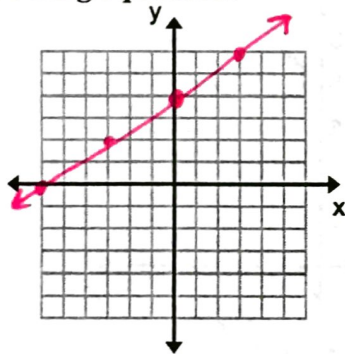
$\frac{3}{2}$

17. (-14,7), (0,-1)

$-\frac{4}{7}$

Graph the line of the following equations.

18. $y = \frac{2}{3}x + 4$



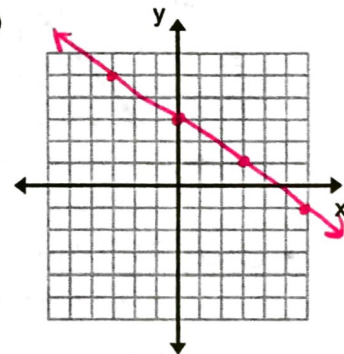
20. $2x + 3y = 9$

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

Intercepts:

(4.5, 0)

(0, 3)



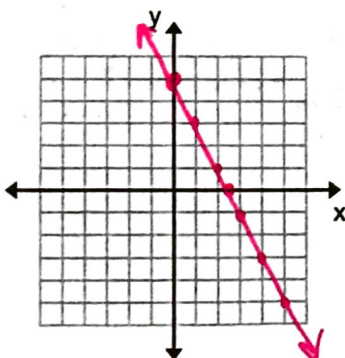
19. $4x + 2y = 10$

$y = -2x + 5$

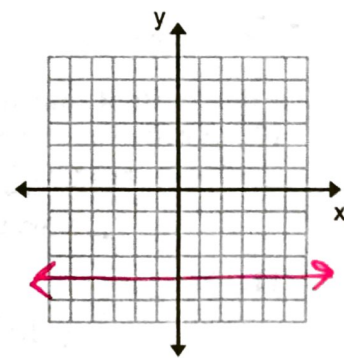
Intercepts:

(0, 5)

(2.5, 0)



21. $y = -4$



Write the equation of the line in slope-intercept form. ($y = mx + b$)

22. $m = -7; b = 4$

$y = -7x + 4$

23. $m = -\frac{1}{4}; b = \frac{2}{7}$

$y = -\frac{1}{4}x + \frac{2}{7}$

24. $m = 0; b = -1$

$y = -1$

25. $m = \frac{3}{4}; (0, 8)$

$y = \frac{3}{4}x + 8$

26. $m = -1; (0, -5)$

$y = -x - 5$

$y = -x - 5$

Solve for y . Write the equation in slope-intercept form. ($y = mx + b$)

27. $-5y = 2x + 10$

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

28. $6x + 3y = 2$

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

29. $y - 8 = -15$

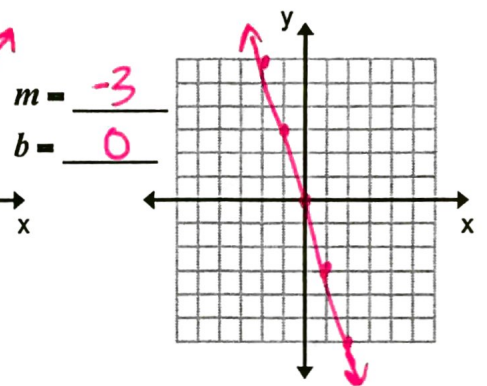
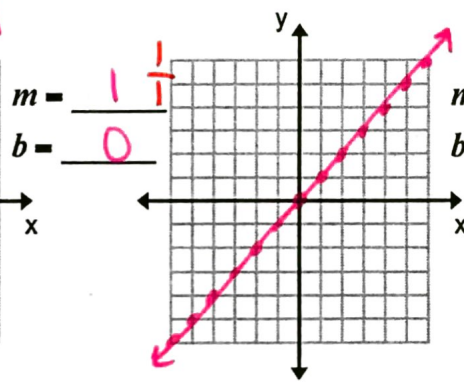
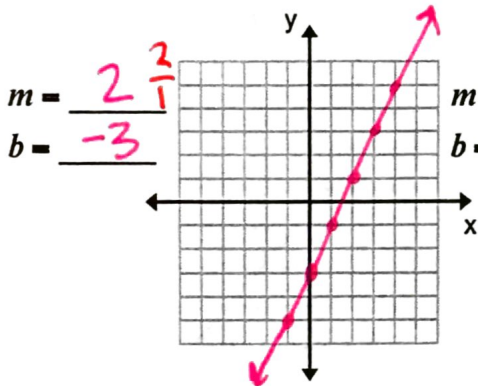
$y = -7$

Graph each equation using slope-intercept form.

30. $y = 2x - 3$

31. $y = x$

32. $y = -3x$

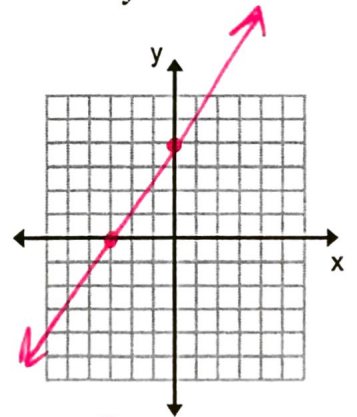
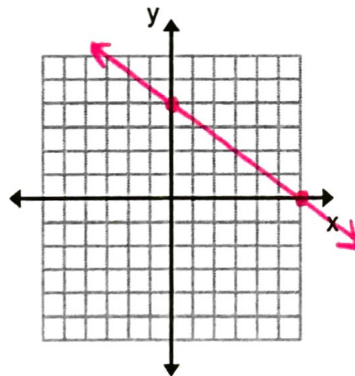
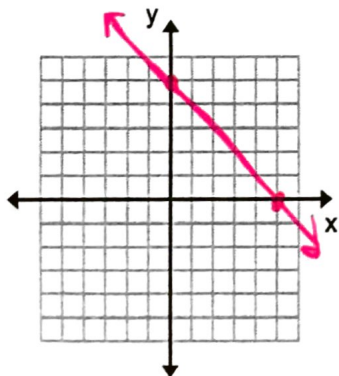


Find the x - and y -intercepts and then graph each line. Write the intercepts as a point.

33. $x + y = 5$

34. $2x + 3y = 12$

35. $4x - 3y = -12$



x -int: $(5, 0)$
 y -int: $(0, 5)$

x -int: $(6, 0)$
 y -int: $(0, 4)$

x -int: $(-3, 0)$
 y -int: $(0, 4)$

36. Given the equation $y = -3x + 4$, if the line shifts down by 5 units what is the new equation of the line.

$$y = -3x - 1$$

37. Which equation has the steepest slope?

A. $y = -3x + 2$

B. $y = 5x + 7$

C. $y = -9x + 1$

38. Given the equation $y = \frac{2}{3}x - 7$, if the slope remains the same and the y -intercept increases by 2 units what is the new equation of the line?

$$y = \frac{2}{3}x - 5$$