

Module 5/ Chapter 6 Practice Test

#3-7, use these points: X(5,-3) M(10, 1) A(0,-3) S(-2, 3.5)

3. Find the slope of the line between point X and A. $\frac{-3 - (-3)}{5 - 0} = \frac{0}{5} = 0$ (horizontal)

4. Find the slope of the line through the points X and M. $\frac{-3 - 1}{5 - 10} = \frac{-4}{-5} = \frac{4}{5}$

5. Write the equation of the line through X and M in slope-intercept form: $y = \frac{4}{5}x - 7$

$$\begin{aligned} y &= \frac{4}{5}x + b \\ -3 &= \frac{4}{5}(5) + b \\ -3 &= 4 + b \\ -7 &= b \end{aligned}$$

6. Find (2) more points that would be on the line from X to M. $(0, -7)$ $(20, 9)$

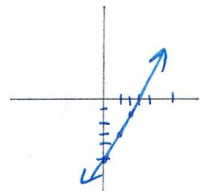
7. Someone wrote down a point on that line (from X to M). It is so messy I can barely read it. I can see the y-coordinate is 11.4. What must the x-coordinate be?

$$11.4 = \frac{4}{5}x - 7$$

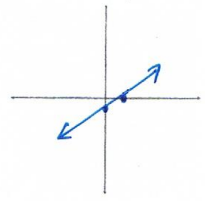
$$\begin{aligned} 18.4 &= \frac{4}{5}x \\ 23 &= x \end{aligned}$$

#8-12. Graph each equation or inequality.

8. $y = 2x - 5$

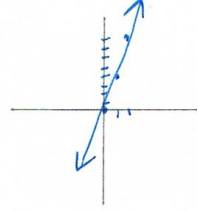


9. $3x - 6y = 6$

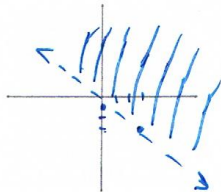


10. $-4x + y = 0$

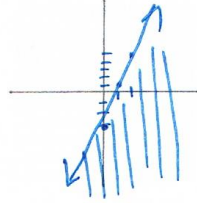
$$y = 4x$$



11. $y > \frac{2}{3}x - 1$



12. $4x - y \geq 3$



$$\begin{aligned} 4x - y &\geq 3 \\ -4x &\quad -4x \\ -y &\geq 3 - 4x \\ &\quad -1 \\ y &\leq -3 + 4x \end{aligned}$$

#13-14, Write the equation of the line from each set of circumstances:

13. $m = -4$ and line goes through $(13, -2)$

$$\begin{aligned} y &= -4x + b \\ -2 &= -4(13) + b \\ -2 &= -52 + b \\ +52 &\quad +52 \\ 50 &= b \end{aligned}$$

$$y = -4x + 50$$

14. Line goes through $(4, -5)$ and $(6, 9)$

$$\frac{-5 - 9}{4 - 6} = \frac{-14}{-2} = 7 \text{ slope}$$

$$\begin{aligned} y &= 7x + b \\ 9 &= 7(6) + b \\ 9 &= 42 + b \end{aligned}$$

$$y = 7x - 33$$

15. In 1995 a newspaper had a circulation of 51,096,000. In 2005 the number of newspaper customers increased to 58,826,000. The relationship between the year (x) and the number of people who bought the newspaper (y) was found to be linear. Let 1990 = year 0, so 1991 = 1, 1992 = 2, etc.

a. Write the equation of the line modeling this situation.

$$y = 773,000x + b$$

$$51,096,000 = 773,000(5) + b$$

$$47,231,000 = b$$

$$y = 773,000x + 47,231,000$$

$$\frac{51,096,000 - 58,826,000}{5 - 15} = m$$

$$\frac{-7,730,000}{-10} = m$$

$$773,000 = m$$

b. What is the y-intercept of your equation and what does it mean in relation to this situation?

47231000 is y-int. That is # subscriptions in 1990.

c. Predict the number of newspaper customers in 2010.

$$y = 773000(20) + 47231000 = 62,691,000$$

16. Find the x and y-intercepts of $3x - 5y = 12$

$$\begin{aligned}x\text{-int} &= 4 \\y\text{-int} &= -2.4\end{aligned}$$

$$\frac{1}{4} \div \frac{1}{2}$$