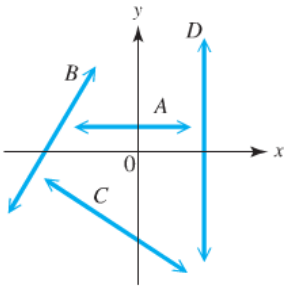
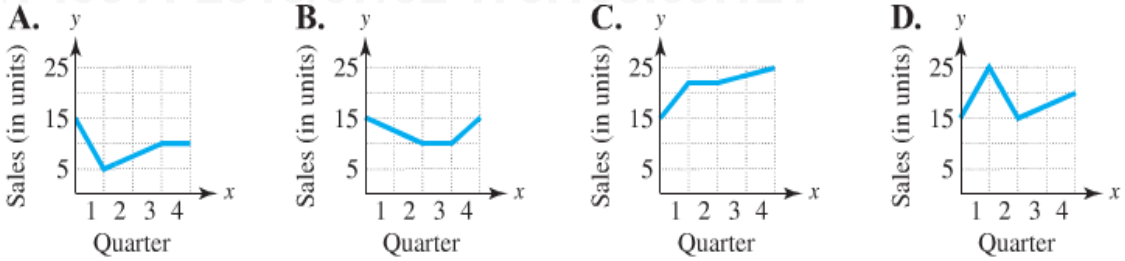
**3.2 In-class Practice** Math 085

1. On the basis of the figure shown here, determine which line satisfies the given description.




   a) The line has positive slope.
   b) The line has negative slope.
   c) The line has slope 0.
   d) The line has undefined slope.

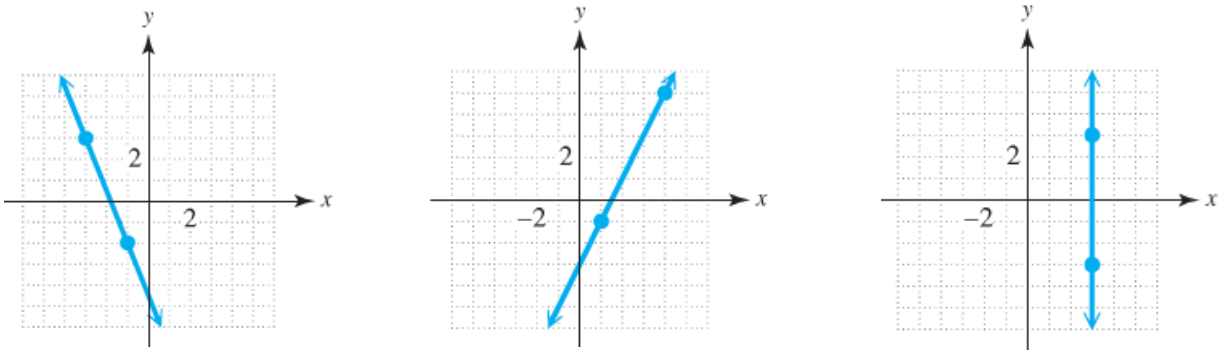
2. Match each situation in a) – d) with the most appropriate graph in A – D.
   a) Sales rose sharply during the first quarter, leveled off during the second quarter, and then rose slowly for the rest of the year.
   b) Sales fell sharply during the first quarter and then rose slowly during the second and third quarters before leveling off for the rest of the year.
   c) Sales rose sharply during the first quarter and then fell to the original level during the second quarter before rising steadily for the rest of the year.
   d) Sales fell during the first two quarters of the year, leveled off during the third quarter, and rose during the fourth quarter.




3. Which of the following forms of the slope formula are correct?
   a) $m = \frac{y_1 - y_2}{x_2 - x_1}$ b) $m = \frac{y_1 - y_2}{x_1 - x_2}$ c) $m = \frac{x_2 - x_1}{y_2 - y_1}$ d) $m = \frac{y_2 - y_1}{x_2 - x_1}$

4. Find the slope of the line through each pair of points, if possible, and indicate whether the line through the points rises from left to right, falls from left to right, is horizontal, or is vertical.
   a) $(-2, 2)$ *and* $(4, -1)$ b) $(4, -1)$ *and* $(4, 3)$
   c) $(-6, 3)$ *and* $(2, 3)$ d) $\left(-\frac{2}{9}, \frac{5}{18}\right)$ *and* $\left(\frac{1}{18}, -\frac{5}{9}\right)$

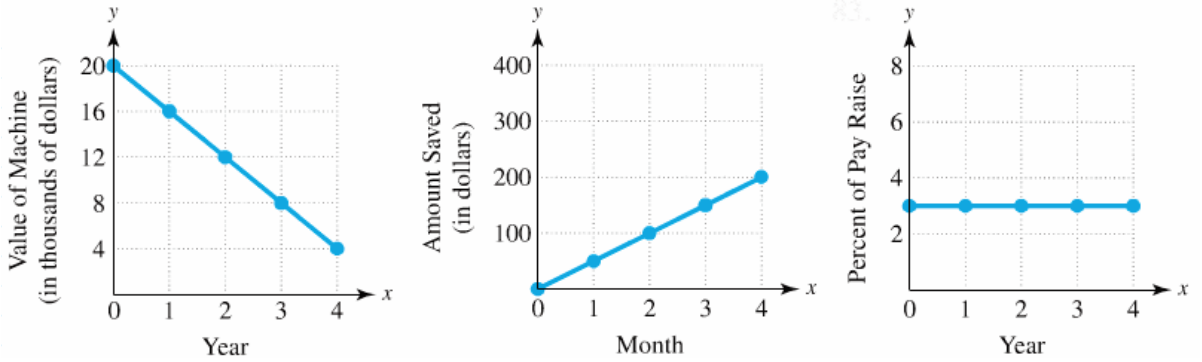
5. Find the slope of each line.



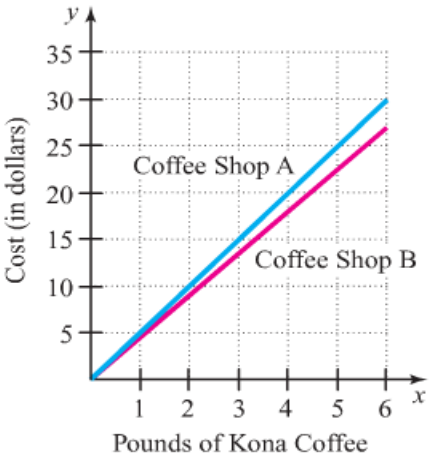

6. Find the slope of the line and then graph it.
   a) $x + 3y = -6$ b) $x + 2 = 0$ c) $2y = 3$ d) $\frac{1}{3}x - \frac{1}{2}y = 1$

7. Graph the described line:
   a) $y$-intercept: $(0, -4)$; $m = -\frac{3}{2}$
   b) passing through $(-2, -4)$; $m = 4$
   c) $m = 0$; passing through $(5, 3)$
   d) passing through $(-2, -4)$; slope undefined

8. Find and interpret the *average rate of change* illustrated in each graph.




9. Two coffee shops sell a Kona blend coffee. The graph shows the cost of $x$ pounds of Kona coffee at each coffee shop.
   a) What does the slope of each line represent?
   b) Which coffee shop charges more for the Kona coffee?




10. If a line has slope $-\frac{4}{9}$, then any line parallel to it has slope _____, and any line perpendicular to it has slope _____.

11. *Decide whether each pair of lines is* parallel, perpendicular, *or* neither.
   a) the line through $(4, 6)$ and $(-8, 7)$ *and* the line through $(-5, 5)$ and $(7, 4)$
   b) $2x + 5y = -7$ *and* $5x - 2y = 1$
   c) $2x + 5y = -8$ *and* $6 + 2x = 5y$

12. Draw a square with vertices $(-5, 3), (-3, -3), (1, 5)$, and $(3, -1)$. Find the slopes of the diagonals of the square. What can you conclude about the diagonals of this square?

13. Determine whether the points $(1, -2), (3, -1)$, and $(5, 0)$ are collinear.