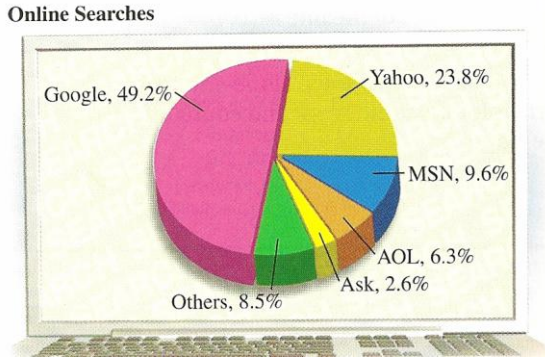


MATH55 Elementary Algebra
 Pretest Chapter 3

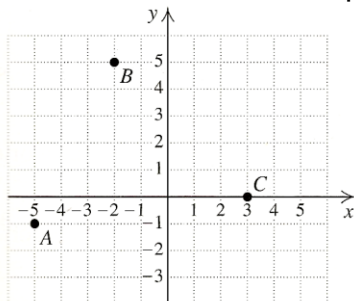
1. The following graph shows the percentage of online searches done in July 2006 that were performed by a particular search engine.



- a) There were 5.6 billion searches done by home and business Internet users in July 2006. How many searches were done using Yahoo?
 b) About 55% of the online searches done by Waterworks Graphics are image searches. In July 2006, Waterworks employees did 4200 searches. If their search engine use is typical, how many image searches did they do using Google?
2. Plot each point
 (5, -1) (2, 3) (-4, 0)

3. In which quadrant is each point located?
 (-8, -7) (15.3, -13.8) $\left(-\frac{1}{2}, \frac{1}{10}\right)$

4. Find the coordinates of each pair in the figure



A B C

5. Determine whether the equation $y = 2x + 7$ has each ordered pair as a solution
 (3, 1) (-3, 1)

6. Show that the ordered pairs (0, -3) and (2, 1) are solutions of the equation $2x - y = 3$. Then use the graph of the two points to determine another solution.

7. Graph

$$y = x - 5$$

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

$$y = -x + 4$$

$$4x + y = 3$$

$$4x + 5 = 3$$

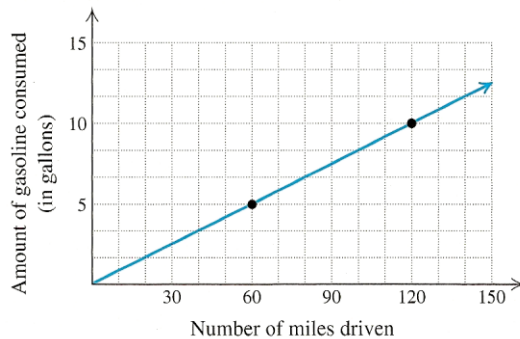
$$5x - 2y = 10$$

8. The average number of daily viewers, v , in millions, of ABC's soap opera "General Hospital" is given by $v = -\frac{1}{4}t + 9$, where t is the number of years since 2000. Graph the equation and use the graph to predict the average number of daily viewers of "General Hospital" in 2008.

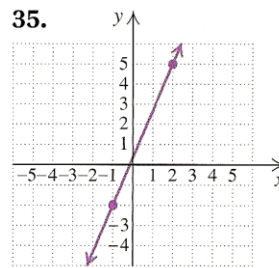
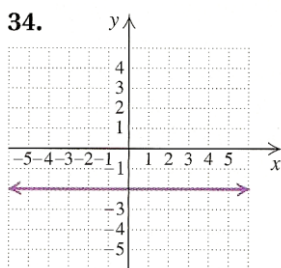
9. At 4:00 P.M., Jesse's Honda Civic was at mile marker 17 of Interstate 290 in Chicago. At 4:45 P.M., Jesse was at mile marker 23.

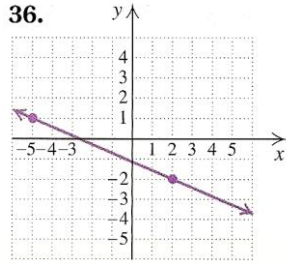
- Find Jesse's driving rate, in number of miles per minute
- Find Jesse's driving rate, in number of minutes per mile

10. The following graph shows data for a Ford Explorer driven on city streets. At what rate was the vehicle consuming gas?



11. Find the slope of each line





12. Find the slope of the line containing the given pair of points. If it is undefined, state this
- | | |
|-------------------------|---------------------------------|
| $(-2, 5)$ and $(3, -1)$ | $(6, 5)$ and $(-2, 5)$ |
| $(-3, 0)$ and $(-3, 5)$ | $(-8.3, 4.6)$ and $(-9.9, 1.4)$ |
13. To meet federal standards, a wheel-chair ramp cannot rise more than 1 ft over a horizontal distance of 12 ft. Express this slope as a grade.
14. Find the x -intercept and the y -intercept of the line given by $5x - 8y = 80$
15. Find the slope and y -intercept of the line given by $3x + 5y = 45$
16. Determine whether each pair of lines is parallel, perpendicular, or neither
- | | |
|--------------|----------------|
| $y + 5 = -x$ | $3x - 5y = 7y$ |
| $x - y = 2$ | $7y - 3x = 7$ |
17. Write the slope-intercept equation of the line with slope $\frac{3}{8}$ and y -intercept $(0, 7)$
18. Write a point-slope equation for the line with slope $-\frac{1}{3}$ and contains the point $(-2, 9)$
19. The average tuition at a public two-year college was \$1359 in 2001 and \$1847 in 2005. Graph the data and determine an equation for the related line. Then **(a)** calculate the average tuition at a public two-year college in 2004 and **(b)** predict the average tuition at a public two-year college in 2012.
20. Write the slope-intercept equation for the line with slope 5 that contains the point $(3, -10)$
21. Write the slope-intercept equation for the line that is perpendicular to the line $3x - 5y = 9$ and that contains the point $(2, -5)$

KEY:

1. a) about 1.3 billion b) about 1137 2. plot 3. III; IV; II 4. (-5, -1); (-2, 5); (3, 0) 5. no; yes 6. (-1, -5) there are others 7. graphs
8. about 7 million 9. a) $\frac{2}{15}$ mi/min; b) 7.5 min/mi 10. 12 mpg 11. $0; \frac{7}{3}$;
- $-\frac{3}{7}$ 12. $-\frac{6}{5}; 0$; undefined; 2 13. 8.33% 14. (16, 0);
- (0, -10) 15. $-\frac{3}{5}; 0, 9$ 16. perpendicular; parallel 17. $y = \frac{3}{8}x + 7$
18. $y - 9 = -\frac{1}{3}x - 2$ 19. a) \$1725; b) \$2701 20. $y = 5x - 25$
21. $y = -\frac{5}{3}x - \frac{5}{3}$