

## MAT 0012 Basic Algebra I

### KEY CONCEPT REVIEW

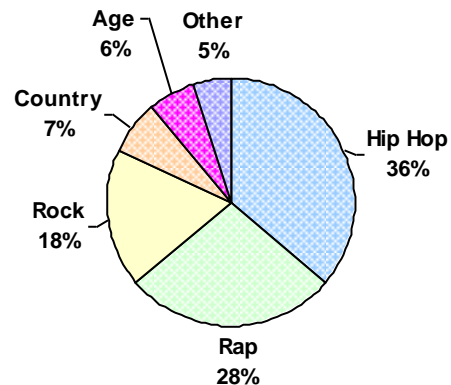
#### SECTIONS 8.1 – 8.3

**TO RECEIVE CREDIT, DO ALL PROBLEMS, MAKE CORRECTIONS, AND SHOW ALL WORK.**

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| <p>1) Which type of graph uses symbols to represent amounts?</p> <p>A) Circle graph                      B) Pictograph<br/>C) Bar graph                            D) Line graph</p> | <p>2) Which type of graph is often used to show changes over time?</p> <p>A) Bar graph                            B) Circle graph<br/>C) Line graph                            D) Pictograph</p> |
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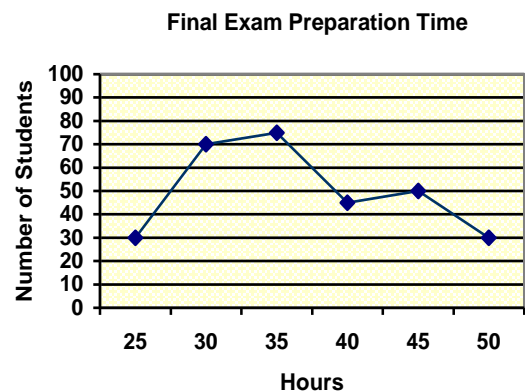
**A survey of 2,450 students regarding their music preference produced the circle graph below.**

- 3) What percent of the students surveyed preferred hip hop or rap music?
- 4) How many students preferred hip hop and rap music?
- 5) How many students did not prefer hip hop, rap, or rock? What percent is this?



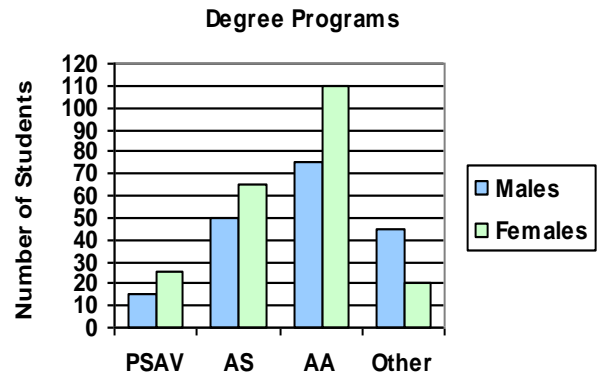
**A survey of 300 college algebra students regarding the amount of time (in hours) they studied for their final exam resulted in the line graph below. Use this graph to answer the following questions.**

- 6) How many students studied 40 hours or more?
- 7) What percent of students surveyed studied 40 hours?

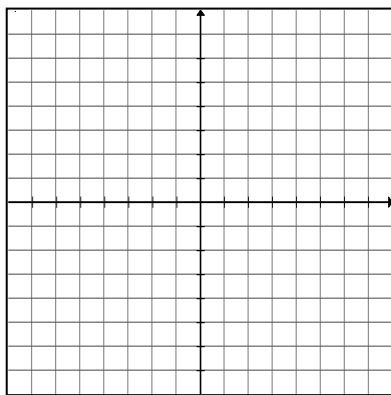


A survey of 400 community college students regarding their degree or certificate program yielded the bar graph on the right. Use this graph to answer the following questions.

- 8) What ratio of male students were enrolled in AS degree programs? Write this ratio as a percent.
- 9) If 720 students are surveyed at another college and 12.5% of these students are males in the AS degree program, how many male students enroll in the AS degree programs?



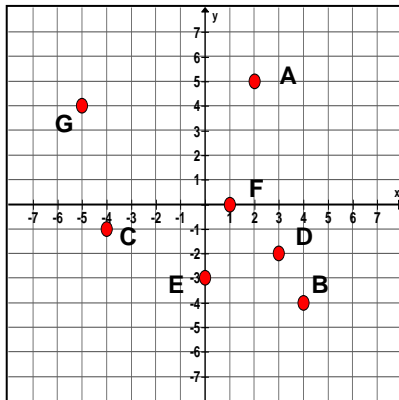
- 10) What is the meaning of the word "ordered" when it is used to refer to any point (x, y)?
- 11) What does the x-coordinate measure? What does the y-coordinate measure?
- 12) Explain why the ordered pairs (2, 3) and (3, 2) do not have the same point as their graph.
- 13) Copy the graph below. Number and label the x-axis and the y-axis. Label each quadrant and the point referred to as the "origin."



- 14) Use the graph you created in Problem 13 to answer the following questions.
  - a) In which quadrant does the point  $3, -5$  lie?
  - b) If a point has the coordinates  $(0, 6)$ , which axis does it lie on?
  - c) In which quadrant does the point  $-4, 2$  lie?
  - d) In which quadrant are both coordinates negative?
  - e) What is the second coordinate of any point that lies on the x-axis?
- 15) Plot each ordered pair on the graph you created for Problem 13, and label each point.

$$(2, -4), \left(-\frac{3}{2}, 5\right), (0, -2), (-1, -3), (6, 0), (1, 4)$$

16) Identify the ordered pairs for the points labeled A through F.



- A = \_\_\_\_\_
- B = \_\_\_\_\_
- C = \_\_\_\_\_
- D = \_\_\_\_\_
- E = \_\_\_\_\_
- F = \_\_\_\_\_

17) Refer to the graph above. A student writes the coordinates of point G as  $-5, 4$ . Has the student written an ordered pair? Explain why or why not.

18) In your own words, explain how to determine if an ordered pair is a solution of a given equation.

**Decide if the ordered pair is a solution of the given equation.**

19)  $x = -4y$ ;  $(-8, 2)$

- A) Yes
- B) No

20)  $5x - 3y = 15$ ;  $(5, 2)$

- A) Yes
- B) No

**Complete each ordered-pair solution of the given equation.**

21)  $y = 2x - 4$ ;  $(0, \quad), (\quad, 0), (3, \quad)$

**Plot the ordered-pair solutions on the graph provided.**

22)  $2x + y = 5$ ;  $(1, 3), (5, -5), (2, 1)$

