

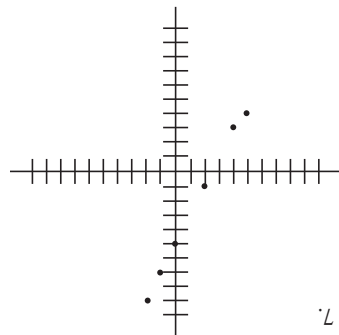
15. -8  
 14. 4.35  
 13. 1.2  
 12.  $1\frac{4}{3}$   
 11. 3  
 10.  $-1\frac{1}{2}$   
 9. 5  
 8. It should pass through (-3, -1) and (5, 15)

$$\begin{array}{r|l} 2 & X \\ 1 & Y \\ 7 & \\ \hline 0 & \\ 5 & \\ -2 & \\ -1 & \\ -4 & \\ -3 & \\ -5 & \\ -5 & \end{array}$$

$$\begin{array}{r|l} 7 & X \\ 1 & Y \\ -10 & \\ \hline -5 & \\ 14 & \\ -5 & \end{array}$$

$$\begin{array}{r|l} 2 & X \\ -1 & Y \\ -1 & \\ 2 & \\ 8 & \\ 8 & \end{array}$$

$$\begin{array}{r|l} 4 & X \\ 1 & Y \\ -1 & \\ -5 & \\ -19 & \end{array}$$



6.

4.

5.

3.

2. (a) (2,0)  
 (b) (-2,-2)  
 (c) (0,-4)

1. (a) 1  
 (b) 1  
 (c) 0

# BASIC MATH

## The Complete Course Lesson Twenty One

### Graphing in the Coordinate Plane

KA8421

### Teaching Guide & Worksheet

#### HOW TO USE THE VIDEO AND TEACHING GUIDE

1. The "STOP TO THINK" signal means pause to think.
2. The "STOP TO WORK" signal means work the problem(s).
3. Rewind the tape and watch the lesson again if the concept is not clear.
4. Use "Learning Strategies" section of the Teachers Guide as memory aids and topics for classroom discussion.
5. Students should complete the exercises on the worksheet to confirm their understanding of this lesson.

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## LEARNING STRATEGIES

### RATIONALE FOR THE COORDINATE PLANE

- Latitude and longitude
  - Every location has a unique latitude and longitude
  - Every "latitude, longitude" has a unique location
- Plotting relationships—the relationship between Fahrenheit and Celsius temperatures
- Using a chart to get points
  - 0 degrees C = 32 degrees F
  - 10 degrees C = 50 degrees F
  - 20 degrees C = 68 degrees F
  - 30 degrees C = 86 degrees F
  - 40 degrees C = 104 degrees F
- Plotting points
  - The horizontal coordinate is C
  - The vertical coordinate is F
- Constructing a line through the points

### USING ORDERED PAIRS

- First coordinate is x
  - The horizontal coordinate
  - It represents the input
- Second coordinate is y
  - The vertical coordinate
  - It represents the output
- Examining points in the coordinate plane
  - 4,2 is in the first quadrant
  - 1,3 is in the second quadrant
  - 3,-2 is in the third quadrant
  - 5,-3 is in the fourth quadrant

### PLOTTING POINTS FOR EQUATIONS

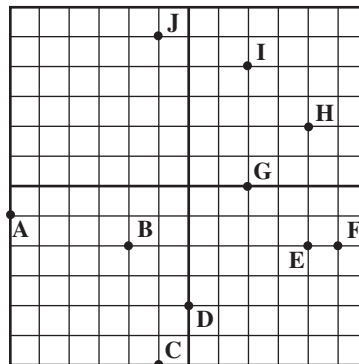
- The meaning of an equation of the form  $y = ax + b$ 
  - $y = 2x + 3$
  - Select a value for x, double it, and add three
- Finding ordered pairs for an equation using a chart
  - $x = -3, y = -3$
  - $x = -1, y = 1$
  - $x = 0, y = 3$
  - $x = 2, y = 7$
  - Find y if x is -2, 1, and 3
- Plotting points for ordered pairs
- Looking at the points for different types of  $y = ax + b$  equations
  - a is positive and b is negative
  - a is negative and b is positive
  - a is negative and b is negative

### USING THE PLOTTING OF POINTS AND A LINE IN REAL PROBLEMS

- Examining the data for the 1988-89 Chicago Bulls minutes played versus points scored
  - Plotting points
  - Graphing a "fit" line
  - The influence of one "special" player

- Examining data on the weights of infants in Nahya, Egypt
  - Viewing the points
  - Plotting a fit line
  - The meaning of the slope of the fit line
  - The meaning of the y-intercept of the fit line

## WORKSHEET STRATEGIES



- Identify the letters for each ordered pair

- (2, 4)
- (-1, 5)
- (-1, -6)

- Identify the ordered pair for each letter

- G
- B
- D

### Complete the roster

- $Y = 3x - 4$

X	Y
-5	
1	
4	

- $Y = -3X - 1$

X	Y
-3	
-1	
2	

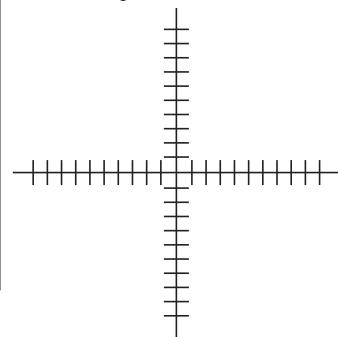
- $Y = 4 - 2X$

X	Y
-5	
-1	
7	

- $Y = -2X + 5$

X	Y
-5	
-4	
-2	
0	
1	
2	

- Use the roster from problem 6 to graph the points corresponding to the ordered pairs



- Draw a line through the points.

Use the following to solve 9-15:

$$\text{For } Y = -\frac{1}{2}x + 2$$

- Find y if x is -6

- Find y if x is 7

- Find y if x is -2

- Find y if x is  $\frac{1}{2}$

- Find y if x is 1.6

- Find y if x is -4.7

- Find the x that causes y to be 6