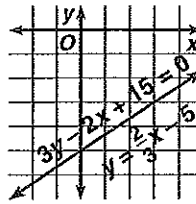


Honors Precalculus Unit 1 Test Part A Review

1.

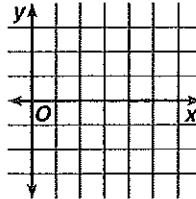
Determine the solution.



1. 1, 3

2. Solve by graphing.

$$\begin{aligned} 5x + 2y &= 8 \\ x - y &= 3 \end{aligned}$$



2. (2, -1)

3. Solve algebraically.  $4x - 3y = 5$   
 $4x - 3y = 10$

Use matrices *D*, *E*, and *F* to find the difference and product.

$$D = \begin{bmatrix} -2 & 1 \\ 7 & 5 \\ 3 & -4 \end{bmatrix} \quad E = \begin{bmatrix} -3 & -4 \\ 0 & 1 \\ 2 & 6 \end{bmatrix} \quad F = \begin{bmatrix} -2 & 5 & 1 \\ 3 & 4 & -6 \end{bmatrix}$$

3. N.S.

4.  $E - D$

5.  $3F$

$$\begin{bmatrix} -1 & -5 \\ -7 & -4 \\ -1 & 10 \end{bmatrix}$$

$$\begin{bmatrix} -6 & 15 & 3 \\ 9 & 12 & -18 \end{bmatrix}$$

6. For what values of  $x$  and  $y$  is the matrix equation

$$\begin{bmatrix} x \\ y + 3 \end{bmatrix} = \begin{bmatrix} 5y \\ x + 7 \end{bmatrix} \text{ true?}$$

6.  $x = -5, y = -1$

7. Find the value of  $\begin{vmatrix} -3 & 2 \\ 5 & -7 \end{vmatrix}$ .

7. 11

8. If it exists, find  $A^{-1}$  if  $A = \begin{bmatrix} 2 & 0 \\ 1 & 3 \end{bmatrix}$ .

$$\begin{bmatrix} \frac{1}{2} & 0 \\ -\frac{1}{6} & \frac{1}{3} \end{bmatrix}$$

9. Solve using matrix equations.  $x - y = 5$   
 $2x + 3y = 10$

9. (5, 0)

10. Lucien can buy 1 pound of Columbian coffee beans for \$4.25. He can buy 1 pound of French roast coffee beans for \$3.75. If he buys a one-pound mixture of the two kinds of beans for \$4.00, how much of each kind of coffee bean does he buy? Write a system of equations and solve by using augmented matrices.

$$\begin{aligned} 4.25x + 3.75y &= 4 \\ x + y &= 1 \end{aligned}$$

10.  $\frac{1}{2}$  lb. each (0.5, 0.5)

11. Solve this system by using augmented matrices.  $x - 2y + z = -5$   
 $3x - 2y + z = 3$   
 $2x - y + 2z = -7$

11. (4, 1, -7)

# Chapter Tests

## Chapter 1 Test

- Let  $A = (-4, 7)$  and  $B = (4, -5)$ .
  - Find the length of  $\overline{AB}$ .  $4\sqrt{13}$
  - Find the coordinates of the midpoint of  $\overline{AB}$ .  $(0, 1)$
- Find the value of  $a$  if it is known that the point  $(-3, 7)$  lies on the line  $2x + ay = 26$ .  $32, 7$
- Solve the equations  $3x - 2y = 3$  and  $5x + 4y = 16$  simultaneously. Then sketch the graphs of the lines and label the intersection point with its coordinates.  $(2, \frac{3}{2})$
- Find the slope and the  $y$ -intercept of the line  $3x + 2y = -1$ .  $m = -\frac{3}{2}, b = -\frac{1}{2}$
- Tell which of the following equations have parallel line graphs and which have perpendicular line graphs.  $a \parallel b, a \perp c, b \perp c$ 
  - $3x - 2y = 12$
  - $y = \frac{3}{2}x + 1$
  - $4x + 6y + 20 = 0$
- Write an equation of the line through the points  $(6, -2)$  and  $(3, 7)$ .  $y = -3x + 16$
- Write an equation of the line through the point  $(2, 5)$  and parallel to the line  $4x - 3y = -50$ .  $y = \frac{4}{3}x + \frac{7}{3}$
- Write an equation of the line with  $x$ -intercept 2 and  $y$ -intercept  $-3$ .  $y = \frac{3}{2}x - 3$
- Write an equation of the vertical line through the point  $(5, 1)$ .  $x = 5$
- Writing** Describe the steps for finding an equation of the median from vertex  $A$  in  $\triangle ABC$ . *see below*
  - Write an equation of the median from  $A$  if  $A(2, 1)$ ,  $B(4, 8)$ , and  $C(8, -2)$  are the vertices of  $\triangle ABC$ .  $y = \frac{1}{2}x$
- Twyla buys a 10-ride pass so that she can use public transportation to go to and from work. The pass costs \$15 and is worth \$0 after the tenth ride.
  - Give an equation of the linear function that models the value of the pass as a function of the number of rides completed.
  - Use the equation to find the value of the pass after the sixth ride.
    - $V = 15 - 1.5r$
    - \$6

10. a. use coordinates of  $B$  &  $C$  to find the coordinates of the midpoint "M" of  $\overline{BC}$ . Then use the coordinates of  $A$  &  $M$  to write an eqn.