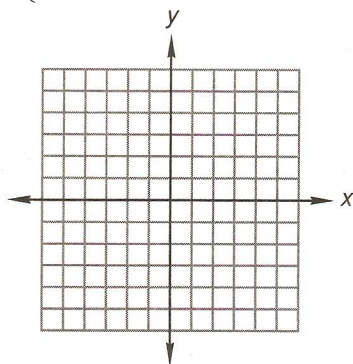
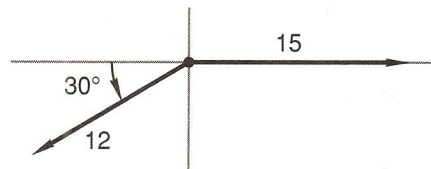


- The number of boys varies directly as the number of girls and inversely as the number of teachers. When there are 24 boys and 16 girls, there are 2 teachers. How many girls are there when there are 72 boys and 6 teachers? Work the problem twice, once using the variation form and once using the equal ratio form.
- The 600-mile trip to the lake took twice as long as the 240-mile trip to the ocean. If the speed to the ocean was 6 mph less than the speed to the lake, find both speeds and both times.
- Determine the amounts of 20% and 50% saline solutions that should be mixed to obtain 300 gallons of 41% saline solution.
- Solve: 
$$\begin{cases} 3x - y = 4 \\ xy = 7 \end{cases}$$
- Which of the following sets of ordered pairs are functions?
  - (3, 2), (6, -1), (2, -1)
  - (3, 2), (2, -5), (3, -1)
  - (2, 3), (-3, 4), (-2, 3)

6. Graph: 
$$\begin{cases} 2x + y < 3 \\ x \geq -2 \end{cases}$$



7. Find the resultant of the two forces shown.



8. Graph on a number line:  $-2 < x - 2 \leq 5$ ;  $D = \{\text{Reals}\}$



- Find  $c$ : 
$$\frac{x}{c + m} = p \left( \frac{e}{y} + \frac{f}{z} \right)$$
- Use substitution to solve: 
$$\begin{cases} 3x - 2y = 9 \\ 2x + 5y = 19 \end{cases}$$
- Find the number that is  $\frac{2}{3}$  of the way from  $\frac{3}{4}$  to  $3\frac{5}{12}$ .

12. Solve: 
$$\frac{x - 2}{4} = \frac{x - 3}{6} + 5$$

13. Solve  $-3x^2 + 2x - 7 = 0$  by completing the square.

14. Use unit multipliers to convert 7000 feet per minute to kilometers per hour.

Simplify:

15. 
$$\frac{(a^{3c})^{1/2} a^{3c}}{x^{cf/3}}$$

16. 
$$\frac{3i^3 - 2i^2}{-2i^2 - i^3}$$

17. 
$$-(-\sqrt{-16}) - \sqrt{-5}\sqrt{-5} + 3 - 3i^3 - 3i^2 + 3i$$

18. 
$$\frac{mn}{1 + \frac{m}{n + \frac{1}{mn}}}$$

19. 
$$\sqrt[5]{9^4\sqrt{3}}$$

20. 
$$\sqrt{\frac{3}{5}} + 2\sqrt{\frac{5}{3}} - 3\sqrt{375}$$