

1. Match each equation with an appropriate table and graph.

a. $y = \left(\frac{1}{2}\right)^x$

Matches: g, h

b. $f(x) = -3x$

Matches: d, j

c. $g(x) = (x + 4)^2 - 2$

Matches: f, i

d.

| x | y |
|----|----|
| -2 | 6 |
| -1 | 3 |
| 0 | 0 |
| 1 | -3 |
| 2 | -6 |

e.

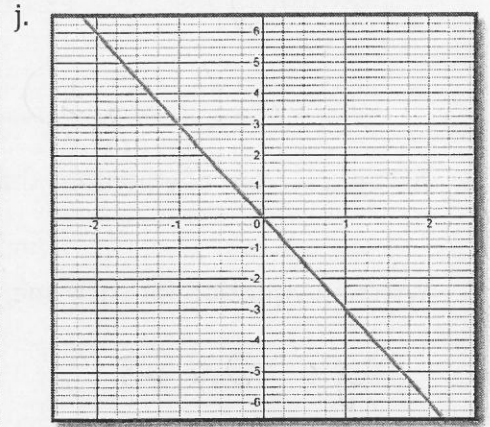
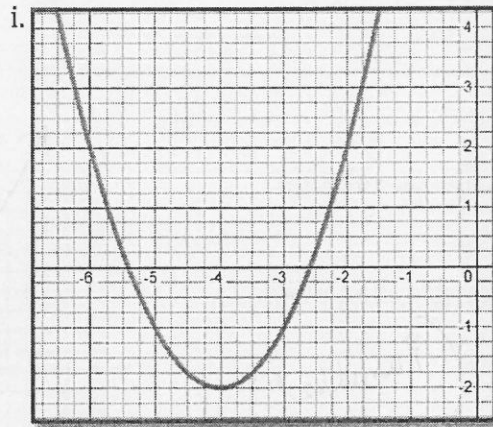
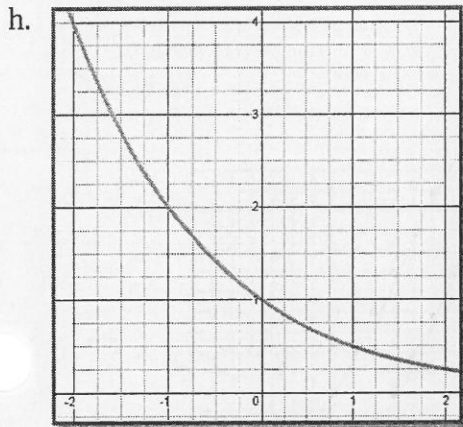
| x | y |
|----|----|
| -6 | -2 |
| -5 | 1 |
| -4 | 2 |
| -3 | 1 |
| -2 | -2 |

f.

| x | y |
|----|----|
| -6 | 2 |
| -5 | -1 |
| -4 | -2 |
| -3 | -1 |
| -2 | 2 |

g.

| x | y |
|----|------|
| -2 | 4 |
| -1 | 2 |
| 0 | 1 |
| 1 | 0.5 |
| 2 | 0.25 |



2. $f(x) = (2x - 3)(x + 4)$

a. Find the x - intercepts for $f(x)$.

$x = \frac{3}{2}$ $x = -4$

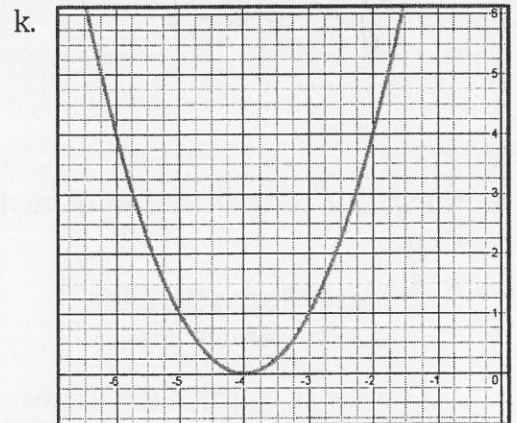
b. Rewrite $f(x)$ Standard Form.

$f(x) = 2x^2 + 5x - 12$

c. Use the quadratic formula to verify your answers from part a.

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

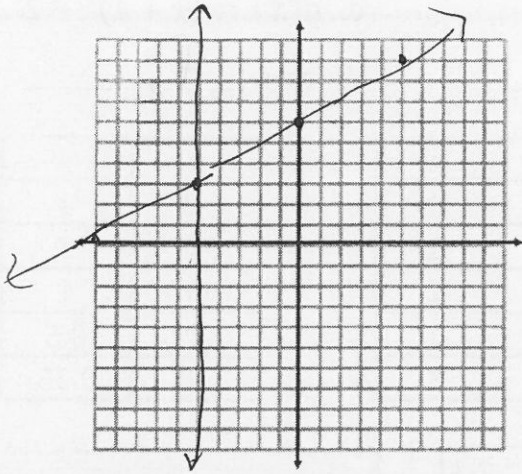
$x = \frac{3}{2}$
 $x = -4$



3. a. Solve the system of equations graphically.

$$x = -5$$

$$y = \frac{3}{5}x + 6$$



Solution: $(-5, 3)$

b. Solve the system of equations algebraically.

$$x = -5$$

$$y = \frac{3}{5}x + 6$$

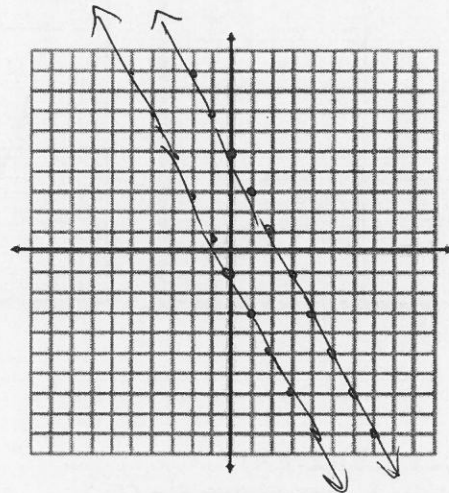
$(-5, 3)$

4. Graph a system of equations that has no solution.

5. Write an equation for each line you graphed in #4.

ex. $y = -2x + 5$
 $y = -2x - 1$

(Parallel lines)



6. Numerous companies now offer chip timing services for cross country races. Each runner wears a chip.

Super Sacco Systems
\$2800 service charge

ACME Timing Company
\$3.00 per runner

Champ's Chips
\$2.00 per runner
\$500 service charge

a. Write an equation that expresses each company's cost as a function of the number of runners in any given race.

SSS $y = 2800$
 ACME $y = 3x$
 CC $y = 2x + 500$

b. The Spartan Invitational has 1000 runners. Which timing company would you hire? Be sure to justify your answer with work.

Champs Chips