

9th Grade Contest round

Solve for x in $7x + 3(1 + 4x) = -2 - 5x$

Find all the points on $y = |x + 5|$ where $y = 12$

Find all the points on $y = -|x - 3| + 2$ where $y = -7$

Find the equation of a line with slope $5/3$ and passes through $(6, 13)$

Find the equation of a line with slope -1.6 and passes through $(-10, 6)$

Name a parallel and a perpendicular line to $y = (2/3)x + 7$

Name a parallel and a perpendicular line to $y = (-1.\overline{3})x + 3$

Are $(2, 7)$, $(-6, 19)$, $(8, -2)$ collinear? If they are, what is the equation the equation?

$$\begin{cases} 5x + 2y = 6 \\ y = -8 \end{cases}$$

$$\begin{cases} -8x - 3y = 13 \\ x = 4 \end{cases}$$

$$\begin{cases} 3x - 5y = 9 \\ x = -y + 2 \end{cases}$$

$$\begin{cases} 7x - 2y = 1 \\ y = -2x + 5 \end{cases}$$

$$\begin{cases} -6x + 2y = 11 \\ 4x + 6y = -7 \end{cases}$$

$$\begin{cases} -4x - 5y = -3 \\ 7x + 3y = 2 \end{cases}$$

$$\begin{cases} 2x + 3y = 7 \\ -6y - 4x = 8 \end{cases}$$

$$\begin{cases} 5x - 2y = 7 \\ 4y - 10x = -14 \end{cases}$$

Add $(3x^2 + 2x - 4)$ and $(5x^2 - 6x + 2)$

Add $(-2x^2 + 3 - 4x)$ and $(4 + 6x + 5x^2)$

Subtract $(-3x^2 + 7x - 2)$ from $(-2x + 4x^2 + 9)$

Expand $(x - 3)^2$

Expand $(x - 2)(x + 4)$

Expand $2(x + 3)(x + 12)$

Graph $y = x^2 - 5$

Graph $y = x^2 + 3$

Graph $y = (x - 2)^2$

Graph $y = (x + 2)^2$

Give your best explanation about what happens when you have:

$$y = x^2 + c$$

$$y = x^2 - c$$

Give your best explanation about what happens when you have:

$$y = (x + c)^2$$

$$y = (x - c)^2$$