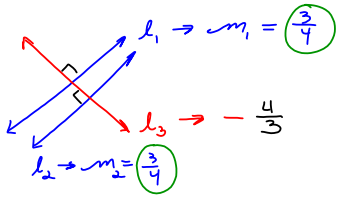
October 2, 2017



$m_1 = \frac{3}{4}$ & $m_2 \perp = -\frac{4}{3}$

$\frac{3}{4} \cdot -\frac{4}{3} = \frac{-12}{12} = -1$ ✓

Oct 2-10:50 AM

$m_1 = -\frac{8}{3}$

$\perp \; m_2 = \frac{3}{8}$

test: $-\frac{8}{3} \cdot \frac{3}{8} = -1$ ✓

Oct 2-11:04 AM

$l_1 = \frac{5}{6}$ ① not perpendicular ② not parallel

$l_2 = -\frac{2}{3}$

test: $\frac{5}{6} \cdot -\frac{2}{3} = \frac{-10}{18} = \frac{-5}{9}$

Oct 2-11:05 AM

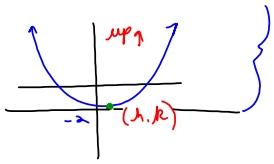
Quadratics

Forms:

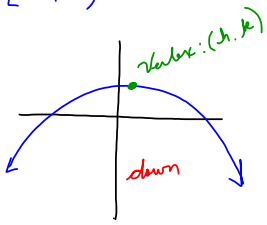
① $ax^2 + bx + c = 0$

② $a(x-h)^2 + k = 0$ S.F.

Vertex: (h, k)



$[-2, \infty)$



Oct 2-11:07 AM

#1) $y = x^2 + 16x + 64$

$f(x) = x^2 + 16x + 64$

① $x^2 + 16x + 64 = 0$

② $x^2 + \underset{\text{"b"}}{\boxed{+16}}x = -64$

a.) $16 \cdot \frac{1}{2} = +8$

b.) $(8)^2 = 64$ add to both sides

③ $x^2 + 16x + 64 = -64 + 64$

Perfect Square Trinomial

$(x+8)^2 = 0$

④ $(x+8)^2 + 0$

Vertex: $(h, k) = (-8, 0)$

Oct 2-11:13 AM

Standard method $2x^2 - 12x + 13 = 0$

$2\left[x^2 - 6x + \frac{13}{2} = 0\right]$

$2\left[x^2 - 6x = -\frac{13}{2}\right]$

a.) $-6 \cdot \frac{1}{2} = -3$

b.) $(-3)^2 = 9$

$2\left[x^2 - 6x + 9 = -\frac{13}{2} + 9\right]$

$2\left[(x-3)^2 = \frac{-13+18}{2} = \frac{5}{2}\right]$

$2\left[(x-3)^2 - \frac{5}{2} = 0\right]$

$2(x-3)^2 - 5 = 0$

$f(x) = 2(x-\underset{h}{3})^2 \underset{k}{-5}$

Vertex: $(3, -5)$

Oct 2-11:22 AM

book method $2x^2 - 12x + 13 = 0$

$2(x^2 - 6x) + 13$

a.) $-6 \cdot \frac{1}{2} = -3$

b.) $(-3)^2 = 9$

$2(x^2 - 6x + 9) + 13 - 2 \cdot 9$

$2(x-3)^2 + 13 - 18$

$2(x-3)^2 - 5$

Oct 2-11:30 AM

$y = 2x^2 - 4x - 2$

$2x^2 - 4x - 2 = 0$

$2[x^2 - 2x - 1 = 0]$

$2[x^2 - 2x = 1]$

a.) $-2 \cdot \frac{1}{2} = -1$

b.) $(-1)^2 = 1$

$2[x^2 - 2x + 1 = 1 + 1]$

$2[(x-1)^2 = 2]$

$2[(x-1)^2 - 2 = 0]$

$2(x-1)^2 - 4$

Vertex: $(1, -4)$

Oct 2-11:34 AM

$2x^2 - 4x - 2$

$2[(x^2 - 2x - 2)]$

a.) $-2 \cdot \frac{1}{2} = -1$

b.) $(-1)^2 = 1$

$2[x^2 - 2x - 2 - 2 \cdot 1]$

$2[(x-1)^2 - 2 - 2$

$2(x-1)^2 - 4$

Vertex: $(1, -4)$

Oct 2-11:42 AM