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1. $ax^2 + bx + c = 0$

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

2. $3x^2 + 8x + 5 = 0$

$$3x^2 + 5x + 3x + 5 = 0$$

$$3x^2 + 3x + 5x + 5 = 0$$

$$3x(x + 1) + 5(x + 1) = 0$$

$$(x + 1)(3x + 5) = 0$$

$$x = -1, x = -5/3$$

3. $ay = bx + c$

$$y = \frac{b}{a}x + \frac{c}{a}$$

$$y = mx + c$$

$$m = \frac{b}{a}$$

4. $3x + 4y + 1 = 0$

$$4y = -3x - 1$$

$$y = -\frac{3}{4}x - \frac{1}{4}$$

So option D is correct

5. $y = 2x - 3$

$$\text{Intercept } C = -3$$

$$\text{slope } m = +2$$

So graph D is correct


6. Correct graph

$$y - 1 = x^2$$

$$\Rightarrow y = x^2 + 1$$

$$y \geq 1$$

So graph a is correct

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7. $y = -(x + 2)^2$ at $x = -2$ $y = 0$

At all value of x , $y \leq 0$

So graph D is correct

8. $y = 2x^2 + 3x + 1$

$$y = 2x^2 + 2x + x + 1 = 0$$

$$2x(x + 1)1(x + 1) = 0$$

$$(x + 1)(2x + 1) = 0$$

$$x = -1, x = -\frac{1}{2}$$

$a > 0$ upward parabola

graph a is correct

9. $v =$ slope of s - t graph

$$v = \frac{ds}{dt} = \frac{40}{8} = 5 \text{ m/s}$$

10. $a = \frac{dv}{dt} = \tan \theta$

$$t = 2 \text{ second } a = \tan 60^\circ$$

$$a = \sqrt{3} \text{ m/s}^2$$

11. slope of v - t graph gives acceleration

$$a = \text{slope} = -\frac{120}{2} = -10 \text{ m/s}^2$$