

Exploration: Solve the given equations using square roots

A. $x^2 = 25$

$$x = \pm \sqrt{25}$$

$$x = \pm 5$$

B. $x^2 = 81$

$$x = \pm \sqrt{81}$$

$$x = \pm 9$$

C. $x^2 + 1 = 50$

$$x^2 = 49$$

$$x = \pm 7$$

D. $x^2 - 6 = 30$

$$x^2 = 36$$

$$x = \pm 6$$

E. $2x^2 + 3 = 11$

$$2x^2 = 8$$

$$x^2 = 4$$

$$x = \pm 2$$

F. $3x^2 - 5 = 22$

$$3x^2 = 27$$

$$x^2 = 9$$

$$x = \pm 3$$

G. $(4x - 7)^2 = 9$

$$4x - 7 = \pm 3$$

$$4x - 7 = 3$$

$$4x = 10$$

$$x = \frac{10}{4}$$

$$x = 2.5$$

$$4x - 7 = -3$$

$$4x = 4$$

$$x = 1$$

H. $(-3x - 17)^2 = 16$

$$-3x - 17 = \pm 4$$

$$-3x - 17 = 4$$

$$-3x = 21$$

$$x = -7$$

$$-3x - 17 = -4$$

$$-3x = 13$$

$$x = -\frac{13}{3}$$

P
E
M
D
A
S

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I. $(b - 4)^2 = 4$

$$b - 4 = \pm 2$$

$$\boxed{b = 6} \quad \boxed{b = 2}$$

J. $(c + 14)^2 = 121$

$$c + 14 = \pm 11$$

$$\boxed{c = -3} \quad \boxed{c = -25}$$

K. $(g - 15)^2 - 9 = 72$

$$(g - 15)^2 = 81$$

$$g - 15 = \pm 9$$

$$\boxed{g = 24} \quad \boxed{g = 6}$$

L. $(h + 6)^2 = 32$

$$h + 6 = \pm \sqrt{32}$$

$$h + 6 = \sqrt{32}$$

$$h + 6 = -\sqrt{32}$$

$$h = \sqrt{32} - 6$$

$$h = -\sqrt{32} - 6$$

$$\boxed{h = 4\sqrt{2} - 6}$$

$$\boxed{h = -4\sqrt{2} - 6}$$

M. $(d + 7)^2 = 100$

$$d + 7 = \pm 10$$

$$\boxed{d = 3} \quad \boxed{d = -17}$$

N. $-3(a - 13)^2 + 1 = -11$

$$-3(a - 13)^2 = -12$$

$$(a - 13)^2 = 4$$

$$a - 13 = \pm 2$$

$$\boxed{a = 15} \quad \boxed{a = 11}$$