

# Chapter 9

## Review Questions & SCOOT Game Answers

Solve by factoring

$$x^2 + 5x + 6 = 0$$

$$(x+3)(x+2) = 0$$

$$\begin{array}{l} x+3=0 \\ \underline{+3 \quad -3} \\ \boxed{x=-3} \end{array}$$

$$\begin{array}{l} x+2=0 \\ \underline{+2 \quad -2} \\ \boxed{x=-2} \end{array}$$

Solve the equation.

$$3x^2 - 10x + 7 = 0$$

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

$$a = 3$$

$$b = -10$$

$$c = 7$$

$$\frac{10 \pm \sqrt{(-10)^2 - 4(3)(7)}}{2(3)}$$

$$\sqrt{16} = 4$$

$$\frac{10 \pm \sqrt{100 - 84}}{6} \rightarrow \frac{10 + 4}{6} = \frac{14}{6} = \left(\frac{7}{3}\right)$$

$$\rightarrow \frac{10 - 4}{6} = \frac{6}{6} = 1$$

Solve the equation.

$$\sqrt{x^2} = \sqrt{36}$$

$$x = \pm 6$$

Solve the equation.

$$\begin{array}{rcl} x^2 - 2x & = & -7/x \\ +7x & & +7x \end{array}$$

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

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

$$\boxed{x=0} \quad x+5=0$$

$$\boxed{x=-5}$$

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

Find the # of real solutions

$$x^2 - 7x + 25$$

$$b^2 - 4ac$$

⊕ 2 real

⊖ 0 real

⊗ 1 real

$$a=1$$

$$b=-7$$

$$c=25$$

$$(-7)^2 - 4(1)(25)$$

$$49 - 100 = -51$$

**no real sol.**

Solve the system

$$y = x^2 + 5$$
$$y = -7x - 7$$

$$x^2 + 5 = -7x - 7$$
$$+x+7 \quad +x+7$$

$$x^2 + 7x + 12 = 0$$

$$(x+3)(x+4) = 0$$

$$x+3=0$$

$$x = -3$$

$$y = (-3)^2 + 5$$
$$y = 14$$

$$x+4=0$$

$$x = -4$$

$$y = (-4)^2 + 5$$
$$y = 21$$

$$(-3, 14)$$
$$(-4, 21)$$

|  |    |    |    |    |
|--|----|----|----|----|
|  | 1  | 2  | 3  | 4  |
|  |    |    |    |    |
|  | 5  | 6  | 7  | 8  |
|  |    |    |    |    |
|  | 9  | 10 | 11 | 12 |
|  |    |    |    |    |
|  | 13 | 14 | 15 | 16 |
|  |    |    |    |    |
|  | 17 | 18 | 19 | 20 |
|  |    |    |    |    |

**\*turn in HW!\***

**1) Get paper**

**2) Make grids**

**(4 x 5)**

**3) Number 1-20**

**4) Wait for next instructions :)**

①

Solve.

$$x^2 + 11x - 26 = 0$$

$$(x - 2)(x + 13) = 0$$

$$x - 2 = 0$$

$$\boxed{x = 2}$$

$$x + 13 = 0$$

$$\boxed{x = -13}$$

②

Solve.

$$x^2 - 25 = 0$$

$$+25 \quad +25$$

$$\sqrt{x^2} = \sqrt{25}$$

$$\boxed{x = \pm 5}$$

③

Solve

$$x^2 - 19x + 80 = -8$$

$+8 \quad +8$

$$x^2 - 19x + 88 = 0$$

$$(x-11)(x-8) = 0$$

$$x=11$$

$$x=8$$

④

Solve

$$x^2 - 5x = -4$$

$+4x \quad +4x$

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

$$x(x-1) = 0$$

$$x=0$$

$$x=1$$

⑤

Solve

$$4x^2 - 100 = 0$$

$$+100 \quad +100$$

$$\frac{4x^2}{4} = \frac{100}{4}$$

$$\sqrt{x^2} = \sqrt{25}$$

$$x = \pm 5$$

⑥

Solve

$$5x^2 - 8x = 8 - 5x$$

$$+5x \quad -8 + 5x$$

$$-8$$

$$5x^2 - 3x - 8 = 0$$

$$a=5$$

$$b=-3$$

$$c=-8$$

$$\frac{3 \pm \sqrt{9+160}}{10}$$

$$= \frac{3 \pm \sqrt{169}}{10}$$

$$\frac{3+13}{10} = \frac{16}{10} = \frac{8}{5}$$

$$\frac{3-13}{10} = \frac{-10}{10} = -1$$

⑦

Find # of real solutions

$$x^2 + 4x = -4$$

$$b^2 - 4ac$$

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

$$16 - 16 = 0$$

1 real solution

⑧

Find # of real solutions

$$ax^2 + bx + c$$

$$x^2 + 8 = 0$$

$$\begin{aligned} a &= 1 \\ b &= 0 \\ c &= 8 \end{aligned}$$

$$b^2 - 4ac$$

$$0^2 - 4(1)(8)$$

$$0 - 32 = -32$$

no  
real

9 Find # of real solutions

$$3x^2 - 9x = -5$$

+5   +5

$$\begin{aligned} a &= 3 \\ b &= -9 \\ c &= 5 \end{aligned}$$

$$81 - 4(3)(5)$$

21

2 real  
sol

10

Solve

$$-3x^2 + 7x = -10$$

$$-3x^2 + 7x + 10 = 0$$

$$\frac{-7 \pm \sqrt{49 - 4(-3)(10)}}{2(-3)} = \frac{-7 \pm \sqrt{169}}{-6}$$

$\begin{cases} \frac{-7+13}{-6} = (-1) \\ \frac{-7-13}{-6} = \frac{-20}{-6} = \frac{10}{3} \end{cases}$

$$\textcircled{11} \quad x^2 + 4x - 1 = 0$$

$$\frac{-4 \pm \sqrt{16 - 4(1)(-1)}}{2} = \frac{-4 \pm \sqrt{20}}{2} = \frac{-4 + 4.47}{2} = 0.24$$

$$\frac{-4 - 4.47}{2} = -4.24$$

$$\textcircled{12} \quad \begin{array}{l} y = x^2 + 3x - 23 \\ y = 25 - 5x \end{array}$$

$$25 - 5x = x^2 + 3x - 23$$

$$x^2 + 8x - 48 = 0$$

$$(x - 4)(x + 12) = 0$$

$$x = 4$$

$$x = -12$$

$$y = 25 - 5(4)$$

$$y = 5$$

$$y = 25 - 5(-12)$$

$$y = 85$$

$$(4, 5)$$

$$(-12, 85)$$

⑬ Solve the system.

$$\begin{array}{r} y = x^2 + 2x - 2 \\ - \quad y = x + 10 \\ \hline \end{array}$$

$$0 = x^2 + x - 12$$

$$(x-3)(x+4)$$

$$x=3$$

$$x=-4$$

$$y=3+10$$

$$y=-4+10$$

$$y=13$$

$$y=6$$

$$\begin{array}{l} (3, 13) \\ (-4, 6) \end{array}$$

⑭ Solve by factoring.

$$x^2 + 7x + 12 = 0$$

$$(x+4)(x+3) = 0$$

$$x = -4$$

$$x = -3$$

⑮ Solve by factoring

$$5x^2 - 10x = 0$$

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

$$5x = 0 \quad x - 2 = 0$$

$$\boxed{x = 0}$$

$$\boxed{x = 2}$$

⑯ Solve by factoring.

$$x^2 - 5x + 4 = 0$$

$$(x-1)(x-4) = 0$$

$$\boxed{x = 1}$$

$$\boxed{x = 4}$$

17-20 Write the quadratic formula.

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

\*Memorize !!  
😊