

Chapter 1 Quiz Review 3

Name KEY

Solve.

1. $-4(x-3)+12=15-5(x+6)$ 2. $\left(\frac{1}{2}-\frac{1}{3}x=\frac{4}{3}\right) 6$

$$-4x+12+12=15-5x-30$$

$$-4x+24=15-5x$$

$$x = -39$$

$$\begin{array}{r} 3-2x = 8 \\ -3 \quad -3 \end{array}$$

$$\frac{-2x}{-2} = \frac{5}{-2}$$

$$x = \frac{-5}{2}$$

3. $\left(\frac{x+2}{4}+\frac{x-1}{3}=2\right) 12$

$$3(x+2)+4(x-1)=24$$

$$3x+6+4x-4=24$$

$$7x+2=24$$

$$7x=22$$

$$x = \frac{22}{7}$$

4. $|-7x-9|=40$

$$-7x-9=-40 \quad -7x-9=40$$

$$-7x=-31 \quad -7x=49$$

$$x = \frac{31}{7}$$

$$x = -7$$

$$x = -7, \frac{31}{7}$$

5. $\left|\frac{1}{3}x-1\right|+3=-11$

$$\left|\frac{1}{3}x-1\right| = -14$$

No Solution

6. $|4x+7|-32=-16$

$$+32 \quad +32$$

$$|4x+7|=16$$

$$4x+7=-16 \quad 4x+7=16$$

$$4x=-23$$

$$4x=9$$

$$x = \frac{-23}{4}$$

$$x = \frac{9}{4}$$

$$x = \frac{-23}{4}, \frac{9}{4}$$

7. $\left|\frac{1}{2}x-3\right|+6=12$

$$\left|\frac{1}{2}x-3\right|=6$$

$$\frac{1}{2}x-3=-6$$

$$\frac{1}{2}x-3=6$$

$$\frac{1}{2}x=-3$$

$$\frac{1}{2}x=9$$

$$x=-6$$

$$x=18$$

$$x = -6, 18$$

Solve the quadratic equation by factoring.

8. $2x^2+14x=36$

$$2x^2+14x-36=0$$

$$2(x^2+7x-18)=0$$

$$\begin{array}{c} \hat{9} \quad \hat{-2} \\ 9-2 \end{array}$$

$$x = -9, 2$$

9. $-12x+8=-4x^2$

$$4x^2-12x+8=0$$

$$4(x^2-3x+2)=0$$

$$\begin{array}{c} \hat{-2} \quad \hat{-1} \\ -2-1 \end{array}$$

$$x = 2, 1$$

Solve the quadratic equation using square roots.

10. $\sqrt{(2x+1)^2}=9$

$$\frac{2x+1}{-1 \quad -1} = \pm 3$$

$$\frac{2x}{2} = \frac{-1 \pm 3}{2}$$

$$x = \frac{-1 \pm 3}{2}$$

$$\frac{-1+3}{2} = \frac{2}{2} = 1$$

$$\frac{-1-3}{2} = \frac{-4}{2} = -2$$

$$x = -2, 1$$

11. $2x^2+90=0$

$$\frac{2x^2}{2} = \frac{-90}{2}$$

$$\sqrt{x^2} = \sqrt{-45}$$

$$x = \pm 3i\sqrt{5}$$

Solve the quadratic equation using the quadratic formula.

$$12. \left(x^2 + \frac{2}{3}x + \frac{1}{3} = 0\right) \cdot 3$$

$$3x^2 + 2x + 1 = 0$$

$$x = \frac{-2 \pm \sqrt{2^2 - 4(3)(1)}}{6}$$

$$x = \frac{-2 \pm \sqrt{-8}}{6} = \frac{-2 \pm 2i\sqrt{2}}{6}$$

$$x = \frac{-1 \pm i\sqrt{2}}{3}$$

$$13. 2x^2 - 5 = 8x$$

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

$$x = \frac{8 \pm \sqrt{(-8)^2 - 4(2)(-5)}}{4}$$

$$x = \frac{8 \pm \sqrt{104}}{4} = \frac{8 \pm 2\sqrt{26}}{4}$$

$$x = \frac{4 \pm \sqrt{26}}{2}$$

Solve the quadratic formula using any method.

$$14. 3x^2 - 75 = -15$$

$$\frac{175 + 75}{3}$$

$$\frac{3x^2 = 60}{3}$$

$$\sqrt{x^2} = \sqrt{20}$$

$$x = \pm 2\sqrt{5}$$

$$15. x^2 + x = 4$$

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

$$\frac{-1 \pm \sqrt{1^2 - 4(1)(-4)}}{2}$$

$$x = \frac{-1 \pm \sqrt{17}}{2}$$

$$16. 5(x+3)^2 + 70 = 10$$

$$5(x+3)^2 = -60$$

$$\sqrt{(x+3)^2} = \sqrt{-12}$$

$$x+3 = \pm 2i\sqrt{3}$$

$$x = -3 \pm 2i\sqrt{3}$$

$$17. x^2 - 9x = -18$$

$$x^2 - 9x + 18 = 0$$

$$\hat{-6-3}$$

$$x = 6, 3$$

Application Problems on pg. 106-107 #83 & 98

$$(83) V = 32d^2 + 32d$$

$$850 = 32d^2 + 32d$$

$$0 = 32d^2 + 32d - 850$$

$$d = 4.7 \text{ ft}$$

$$(98) h = -16t^2 + 26.6t$$

$$0 = -16t^2 + 26.6t$$

$$t = 1.7 \text{ s}$$