

Chapter 1 Quiz Review 2

Name KEY

Solve.

1. $-4(2-x)-3=6+3(2x+1)$ 2. $-\frac{1}{7}x-4=3$

$-8+4x-3=6+6x+3$

$4x-11=6x+9$

$-2x=20$

$x=-10$

$(-\frac{7}{1})-\frac{1}{7}x=7(-\frac{7}{1})$

$x=-49$

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

$8x+4=9x-3$

$7=x$

$x=7$

4. $|-3x+8|=17$

$-3x+8=-17$ $-3x+8=17$

$-3x=-25$ $-3x=9$

$x=\frac{25}{3}$

$x=-3$

$x=\frac{25}{3}, -3$

5. $|4x-1|+3=7$

$|4x-1|=4$

$4x-1=-4$ $4x-1=4$

$4x=-3$

$4x=5$

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

$x=\frac{5}{4}$

$x=-\frac{3}{4}, \frac{5}{4}$

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

$\frac{4|x+7|}{4}=\frac{-20}{4}$

$|x+7|=-5$

No Solution

7. $4|3x-1|+4=12$

$\frac{4|3x-1|}{4}=\frac{8}{4}$

$|3x-1|=2$

$3x-1=-2$

$3x=-1$

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

$3x-1=2$

$3x=3$

$x=1$

Solve the quadratic equation by factoring.

8. $x^2-20x=-96$

$x^2-20x+96=0$

$\begin{matrix} \wedge \\ -12 & -8 \end{matrix}$

$x=12, 8$

9. $-2x-40=-3x^2$

$3x^2-2x-40=0$

$\begin{matrix} -120 \\ \wedge \\ -12 & 10 \\ \frac{3}{3} & \frac{3}{3} \end{matrix}$

-4

$x=4, -\frac{10}{3}$

Solve the quadratic equation using square roots.

10. $2(x-7)^2+67=3$

$\frac{2(x-7)^2}{2}=\frac{-64}{2}$

$\sqrt{(x-7)^2}=\sqrt{-32}$

$\begin{matrix} (x-7) & = & \pm & 4i\sqrt{2} \\ +7 & & +7 & \end{matrix}$

$x=7 \pm 4i\sqrt{2}$

11. $5x^2-120=0$

$5x^2=120$

$\sqrt{x^2}=\sqrt{24}$

$x=\pm 2\sqrt{6}$

Solve the quadratic equation using the quadratic formula.

12. $5x^2 - 4x = -32$ $5x^2 - 4x + 32 = 0$

$$\frac{4 \pm \sqrt{(-4)^2 - 4(5)(32)}}{10}$$

$$\frac{4 \pm \sqrt{-624}}{10}$$

$$\frac{4 \pm 4i\sqrt{39}}{10}$$

$$x = \frac{2 \pm 2i\sqrt{39}}{5}$$

13. $x^2 - 18 = 8x$ $x^2 - 8x - 18 = 0$

$$\frac{8 \pm \sqrt{(-8)^2 - 4(1)(-18)}}{2}$$

$$\frac{8 \pm \sqrt{136}}{2}$$

$$\frac{8 \pm 2\sqrt{34}}{2}$$

$$x = 4 \pm \sqrt{34}$$

Solve the quadratic formula using any method.

14. $x^2 - 13x + 52 = 12$

$$\begin{array}{r} x^2 - 13x + 52 = 12 \\ -12 \quad -12 \\ \hline x^2 - 13x + 40 = 0 \\ \quad \quad \quad \wedge \\ \quad \quad \quad -8 \quad -5 \end{array}$$

$$x = 8, 5$$

15. $x^2 + 6x - 21 = 0$

$$\frac{-6 \pm \sqrt{6^2 - 4(1)(-21)}}{2}$$

$$\frac{-6 \pm 2\sqrt{30}}{2}$$

$$x = -3 \pm \sqrt{30}$$

16. $5(x+3)^2 + 54 = 4$

$$5(x+3)^2 = -50$$

$$(x+3)^2 = -10$$

$$x+3 = \pm i\sqrt{10}$$

$$x = -3 \pm i\sqrt{10}$$

17. $2x^2 - 21 = -x$

$$2x^2 + x - 21 = 0$$

$$\begin{array}{r} -42 \\ \wedge \\ \frac{7}{2} \quad \frac{-6}{2} \\ \quad \quad \quad -3 \end{array}$$

$$x = \frac{-7}{2}, 3$$

Application Problems on pg. 106 #85, 86, & 88

88 a) $A = 0.72(1.28)(7)^2$

$$A = 45.2 \text{ in}^2$$

b) $92 = 0.72(1.28)h^2$

$$\sqrt{99.826} = \sqrt{h^2}$$

$$h = \pm 10$$

$$10 \text{ in}$$

86 $250,000 = 40,000 + 20x + 0.0001x^2$

$$0 = -210,000 + 20x + 0.0001x^2$$

$$\frac{-20 \pm \sqrt{400 - 4(0.0001)(-210,000)}}{2(0.0001)}$$

$$\frac{-20 \pm 22}{.0002} \left\{ \begin{array}{l} \frac{-20+22}{.0002} = 10,000 \\ \frac{-20-22}{.0002} = -210,000 \end{array} \right.$$

$$10,000 \text{ books}$$