

R2.5

PR123

33.

$$\sqrt{x+1} - 3x = 1$$

$$(\sqrt{x+1})^2 = (3x+1)^2$$

$$x+1 = 9x^2 + 6x + 1$$

$$9x^2 + 5x = 0$$

$$x(9x+5) = 0$$

$$\textcircled{x=0} \quad 9x+5=0$$

$$9x = -5$$

$$\cancel{x = \frac{-5}{9}}$$

$$\frac{2}{3} - \frac{5}{3}$$

$$-1$$

$$\text{61. } 1.8x - 6\sqrt{x} - 5.6 = 0$$

$$1.8y^2 - 6y - 5.6 = 0$$

$$\sqrt{x} = \frac{-(-6) \pm \sqrt{(-6)^2 - 4(1.8)(-5.6)}}{2(1.8)}$$

$$\sqrt{x} = \frac{6 \pm \sqrt{36 + 40.32}}{3.6}$$

$$\sqrt{x} = \frac{6 \pm \sqrt{76.32}}{3.6}$$

$$\sqrt{x} = \frac{6 \pm 8.736}{3.6}$$

$$(\sqrt{x})^2 = (4.093)^2 \quad (\sqrt{x})^2 = (-.76)^2$$

$$x = 16.753$$

$$x = .5776$$

77.

$$\frac{1}{8} + \frac{1}{t} = \frac{1}{5}$$

$$\frac{5t}{40t} + \frac{40}{40t} = \frac{8t}{40t}$$

$$\cancel{40t} \cdot \frac{5t + 40}{\cancel{40t}} = \frac{8t}{\cancel{40t}} \cdot \cancel{40t}$$

$$5t + 40 = 8t$$

$$40 = 3t$$

$$\frac{40}{3} = t$$

$$13\frac{1}{3} \text{ min.}$$

$$65. \quad A = P \left(1 + \frac{r}{n} \right)^{nt}$$

$$\underline{3544.06} = \underline{2500} \left(1 + \frac{r}{12} \right)^{12(5)}$$

$$\left(1.4176 \right)^{\frac{1}{60}} = \left(\left(1 + \frac{r}{12} \right)^{60} \right)^{\frac{1}{60}}$$

$$1.0058 = 1 + \frac{r}{12}$$

$$12 \cdot .0058 = \frac{r}{12} \cdot 12$$

$$.07 = r$$

7%

$$69. \quad C = \sqrt{2x + 1}$$

$$(2.5)^2 = (\sqrt{2x + 1})^2$$

$$6.25 = 2x + 1$$

$$\frac{5.25}{.2} = \frac{-2x}{.2}$$

$$26.25 = x$$

26,250 passengers

$$73. \quad 13.95 = 30 - \sqrt{.0001x + 1}$$

-30 -30

$$(-16.05)^2 = (-\sqrt{.0001x + 1})^2$$

$$257.6025 = .0001x + 1$$

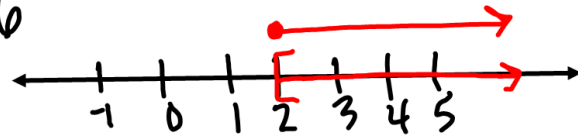
$$\frac{257.6025}{.0001} = \frac{.0001x}{.0001}$$

$$2,566,025 = x$$

$$p = 30 - \sqrt{.0001(8,990,00) + 1}$$

$$p = 0$$

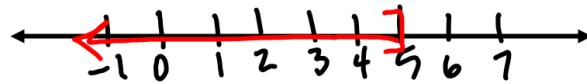
2.6



$$x \geq 2$$

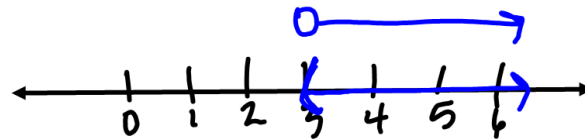
Bracket

$$[2, \infty)$$



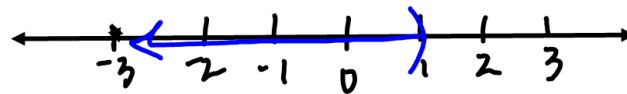
$$x \leq 5$$

$$(-\infty, 5]$$



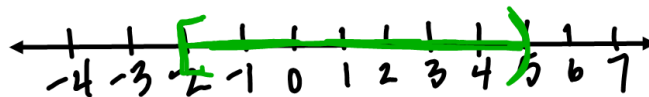
$$x > 3$$

$$(3, \infty)$$



$$x < 1$$

$$(-\infty, 1)$$



$$-2 \leq x < 5$$

$$[-2, 5)$$

$$\frac{-2x}{-2} \leq \frac{6}{-2}$$

$$x \geq -3$$

$$-1 \leq x+1 \leq 10$$

$$5 \leq x \leq 9$$

$$[5, 9]$$