

Review - Unit 1: Part 2

$$\begin{aligned} 1) \quad & 2(4x+3) + 2(x+37) \geq 400 \\ & 8x+6 + 2x+74 \geq 400 \\ & 10x+80 \geq 400 \\ & 10x \geq 320 \\ & x \geq 32 \end{aligned}$$

For values greater than or equal to 32.

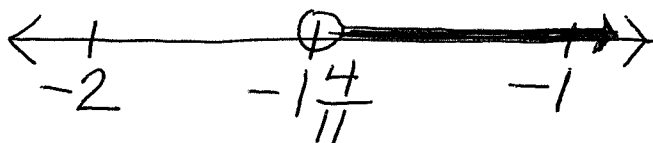
$$\begin{array}{l} 2) \quad \frac{M}{c} = \frac{c(1+r)}{c} \\ \frac{M}{c} = 1+r \\ \frac{M}{c} - 1 = r \end{array} \qquad \begin{array}{l} \left(c = \frac{5}{9}(F-32) \right) \frac{9}{5} \\ \frac{9}{5}c = F-32 \\ \frac{9}{5}c + 32 = F \end{array}$$

$$\begin{array}{l} 3) \quad f(x) = -3x+5 \\ f(2) = -3(2)+5 \\ \quad \quad -6+5 \\ \quad \quad -1 \end{array} \qquad \begin{array}{l} f(x) = -3x+5 \\ f(0) = -3(0)+5 \\ \quad \quad 0+5 \\ \quad \quad 5 \end{array} \qquad \begin{array}{l} f(x) = -3x+5 \\ f(-3) = -3(-3)+5 \\ \quad \quad 9+5 \\ \quad \quad 14 \end{array}$$

$$\begin{aligned} 4) \quad & 3 \left(\frac{84+98+x}{3} \geq 90 \right) \\ & 182+x \geq 270 \\ & \frac{182+x}{-182} \quad \frac{-182}{-182} \\ & \underline{x \geq 88} \end{aligned}$$

John must score at least 88 on his third test.

$$\begin{aligned} 5) \quad & 2x - (4x+3) < 6x + 3(x+4) \\ & 2x - 4x - 3 < 6x + 3x + 12 \\ & -2x - 3 < 9x + 12 \\ & \frac{-2x-3}{+2x} \quad \frac{9x+12}{+2x} \\ & \underline{-3 < 11x + 12} \\ & \frac{-12}{-12} \quad \frac{-12}{-12} \\ & \underline{-15 < 11x} \\ & \frac{-15}{11} < \frac{11x}{11} \\ & -\frac{14}{11} < x \end{aligned}$$



$$\textcircled{6} \quad \left(V = \frac{1}{3} \pi r^2 h \right) 3 \quad A = p + prt \text{ for } r$$

$$\frac{3V}{\pi r^2} = \frac{\pi r^2 h}{\pi r^2}$$

$$\frac{3V}{\pi r^2} = h$$

$$\frac{A - p}{pt} = \frac{prt}{pt}$$

$$\frac{A}{pt} = \frac{1}{t} = r$$

$$\textcircled{7} \quad (3x + 6) - 8 < 4 + x$$

$$\begin{array}{r} 3x - 2 < 4 + x \\ -x \qquad -x \\ \hline 2x - 2 < 4 \\ +2 \quad +2 \\ \hline 2x < 6 \\ \frac{2x}{2} < \frac{6}{2} \\ x < 3 \end{array}$$

All numbers less than 3.

$$\textcircled{8} \quad x + x + 11 + 2x + 5 \geq 72$$

$$\begin{array}{r} 4x + 16 \geq 72 \\ -16 \quad -16 \\ \hline 4x \geq 56 \\ \frac{4x}{4} \geq \frac{56}{4} \\ x \geq 14 \end{array}$$

All values greater than or equal to 14.

$$\textcircled{9} \quad 2(3z - 5) + 4(z + 6) \geq 2(3z + 2) + 3z - 15$$

$$\begin{array}{r} 6z - 10 + 4z + 24 \geq 6z + 4 + 3z - 15 \\ 10z + 14 \geq 9z - 11 \\ -9z \qquad -9z \\ \hline z + 14 \geq -11 \\ -14 \quad -14 \\ \hline z \geq -25 \end{array}$$

$$\textcircled{10} \quad (6x - 5) + 2 > 13 + 5x$$

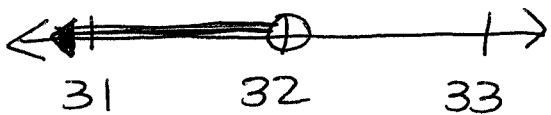
$$\begin{array}{r} 6x - 3 > 13 + 5x \\ -5x \qquad -5x \\ \hline x - 3 > 13 \\ +3 \quad +3 \\ \hline x > 16 \end{array}$$

The number is greater than 16

$$\textcircled{11} \quad \frac{2}{3}(p+3) > \frac{5}{6}(p-4)$$

$$6\left(\frac{2}{3}p + 2 > \frac{5}{6}p - \frac{10}{3}\right)$$

$$\begin{array}{r} 4p + 12 > 5p - 20 \\ -4p \quad -4p \\ \hline 12 > p - 20 \\ +20 \quad +20 \\ \hline 32 > p \end{array}$$



$$\textcircled{13} \quad \frac{9}{5}25 = \frac{5}{9}(F-32) \cdot \frac{9}{5}$$

$$\begin{array}{r} 45 = F - 32 \\ +32 \quad +32 \\ \hline 77 = F \end{array}$$

The Fahrenheit temperature is never more than 77°

$$\textcircled{12} \quad 1) \text{ Not a function}$$

$$D: \{-4, -2, 0\}$$

$$R: \{-8, 1, 3, 5\}$$

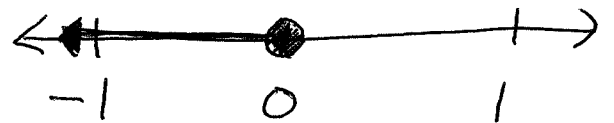
$$2) \text{ Not a function}$$

$$D: \{3, 4\}$$

$$R: \{7, 8\}$$

$$\textcircled{14} \quad -x + 4 + 7x \leq -2 + 3x + 6$$

$$\begin{array}{r} 6x + 4 \leq 4 + 3x \\ -3x \quad -3x \\ \hline 3x + 4 \leq 4 \\ -4 \quad -4 \\ \hline 3x \leq 0 \\ \frac{3x}{3} \quad \frac{\leq 0}{3} \\ x \leq 0 \end{array}$$



$$\textcircled{16} \quad 3\left[\frac{74 + 82 + x}{3} \geq 80\right]$$

$$\begin{array}{r} 156 + x \geq 240 \\ -156 \quad -156 \\ \hline x \geq 84 \end{array}$$

E.g. must score at least 84 on her third battery test.

$$\textcircled{15} \quad \begin{array}{r} 1.50g + 3 \leq 17.25 \\ -3 \quad -3 \\ \hline 1.50g \leq 14.25 \\ \frac{1.50g}{1.50} \quad \frac{14.25}{1.50} \\ g \leq 9.5 \end{array}$$

Terry Toenail can purchase 9 gallons of gasoline.