

Did You Hear About... (#4)

$$\textcircled{1} \begin{array}{l} 7x + 2 > 4x + 15 \\ -4x - 2 \quad -4x - 2 \end{array}$$

$$\frac{3x}{3} > \frac{13}{3}$$

$$(13/3, \infty) \quad \boxed{x > 13/3 (4\frac{1}{3})}$$

$$\textcircled{2} \begin{array}{l} 10 - 8x \geq 5x + 26 \\ -26 + 3x \quad +3x - 26 \end{array}$$

$$-\frac{16}{8} \geq \frac{8x}{8}$$

$$-2 \geq x$$

$$(-\infty, -2] \quad \boxed{x \leq -2}$$

$$\textcircled{3} \begin{array}{l} 9x + 40 \leq 15 + x \\ -x - 40 \quad -40 + x \end{array}$$

$$\frac{10x}{10} \leq \frac{-25}{10}$$

$$x \leq -5/2$$

$$(-\infty, -5/2] \quad \boxed{x \leq -5/2 (-2\frac{1}{2})}$$

$$\textcircled{4} 3(x-7) > 18$$

$$3x - 21 > 18$$

$$\frac{3x}{3} > \frac{39}{3}$$

$$x > 13$$

$$(13, \infty) \quad \boxed{x > 13}$$

$$\textcircled{5} 76 < -5(4x+1)$$

$$76 < -20x - 5$$

$$\frac{80}{-20} < \frac{20x}{-20}$$

$$-4 > x$$

$$(-\infty, -4) \quad \boxed{x < -4}$$

$$\textcircled{6} 6(2x-9) \geq 4+11x$$

$$12x - 54 \geq 4 + 11x$$

$$-11x + 12x + 54 - 54 \geq 4 + 11x - 11x$$

$$[58, \infty) \quad \boxed{x \geq 58}$$

$$\textcircled{7} 8 - 3(4x-1) \leq -49$$

$$8 - 12x + 3 \leq -49$$

$$-12x + 11 \leq -49$$

$$-12x \leq -60$$

$$-12 \quad -12$$

$$[5, \infty) \quad \boxed{x \geq 5}$$

$$\textcircled{8} 2(t+5) > 4t - 7(t+3)$$

$$2t + 10 > 4t - 7t - 21$$

$$2t + 10 > -3t + 21$$

$$-2t + 21 \quad -2t + 21$$

$$\frac{31}{-5} > \frac{-5t}{-5}$$

$$-31/5 < t$$

$$(-31/5, \infty) \quad \boxed{t > -31/5 (-6\frac{1}{5})}$$

$$\textcircled{9} -4(3t-9) \geq 8(-8-t)$$

$$-12t + 36 \geq -64 - 8t$$

$$+12t + 64 \quad +64 + 12t$$

$$\frac{100}{4} \geq \frac{4t}{4}$$

$$25 \geq t$$

$$(-\infty, 25] \quad \boxed{t \leq 25}$$

$$\begin{aligned} \textcircled{10} \quad 14 - (9t - 2) &< -t + 30 \\ 14 - 9t + 2 &< -t + 30 \\ -9t + 16 &< -t + 30 \\ +t \quad -16 \quad +t \quad -16 \\ -8t &\leq 14 \\ -8 &\quad -8 \\ t &\geq -\frac{7}{4} \end{aligned}$$

$$(-7/4, \infty) \quad \boxed{t > -7/4 \left(-1\frac{3}{4}\right)}$$

$$\begin{aligned} \textcircled{14} \quad 9(9t - 4) &\geq 12(12t - 3) \\ 81t - 36 &\geq 144t - 36 \\ -81t + 36 &\geq -81t + 36 \\ 0 &\geq 0 \\ 0 &\geq t \end{aligned}$$

$$\boxed{t \leq 0} \quad (-\infty, 0)$$

$$\begin{aligned} \textcircled{11} \quad 45 &> 12t + 3(t - 8) - 6 \\ 45 &> 12t + 3t - 24 - 6 \\ 45 &> 15t - 30 \\ 75 &> 15t \\ 15 &\quad 15 \\ 5 &> t \end{aligned}$$

$$(-\infty, 5) \quad \boxed{t < 5}$$

$$\begin{aligned} \textcircled{12} \quad 5(8 - 2t) &\leq 2 + 11t(4 + t) \\ 40 - 10t &\leq 2 + 44t + 11t^2 \\ 40 - 10t &\leq 44t + 11t^2 \\ -40 - 10t &\leq 44t + 11t^2 \\ -21t &\leq 21t \\ -21 &\quad -21 \\ t &\geq -1 \end{aligned}$$

$$[-1, \infty)$$

$$\begin{aligned} \textcircled{13} \quad 7(5t - 4) - (2 + 15t) &< 60 \\ 35t - 28 - 2 - 15t &< 60 \\ 20t - 30 &< 60 \\ 20t &< 90 \\ 20 &\quad 20 \\ t &< 9/2 \end{aligned}$$

$$(-\infty, 9/2) \quad \boxed{t < 9/2 \left(4\frac{1}{2}\right)}$$

$\textcircled{15}$ C = copies of book

Income > Cost

$$15C > 4C + 3500$$

$$-4C \quad -4C$$

$$11C > 3500$$

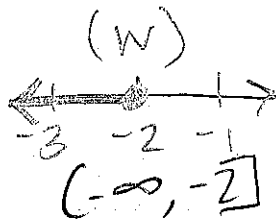
$$11 \quad 11$$

$$C > 318.2$$

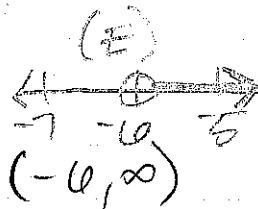
More than
318 copies
need to be
sold.

What did the beaver say... (#5)

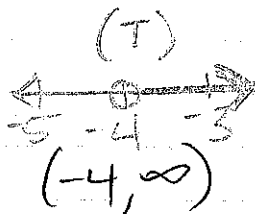
① $-7x + 4 \geq 18$
 $-7x \geq 14$
 $x \leq -2$



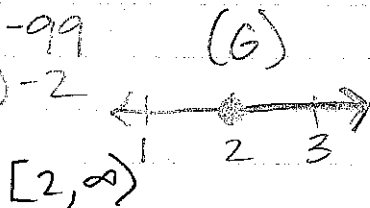
② $-10 + \frac{x}{3} > -12$
 $3(\frac{x}{3}) > (-12) \cdot 3$
 $x > -6$



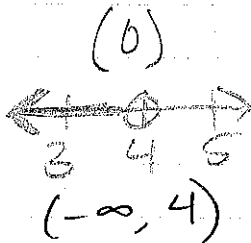
③ $5 - 16x < 69$
 $-16x < 64$
 $x > -4$



④ $-\frac{1}{2}x - 98 \leq -99$
 $-2(-\frac{1}{2}x) \leq (-1) \cdot -2$
 $x \geq 2$



⑤ $15x - 2 < 58$
 $15x < 60$
 $x < 4$



⑥ $4 - \frac{5}{3}x \geq -6$
 $-\frac{3}{5}(-\frac{5}{3}x) \geq (-10) \cdot -\frac{3}{5}$
 $x \leq 6$



⑦ $n = \text{hours}$
 $8 + 3h \leq 25$
 $3h \leq 17$
 $h \leq 5.7$

No more than 5 hours.

⑧ $b = \text{boxes}$

$170 + 69b \leq 2000$
 $69b \leq 1830$
 $b \leq 26.5$

No more than 26 boxes.

⑨ $x = \text{score in 3rd game}$

$222 + 194 + x \geq 627$
 $416 + x \geq 627$
 $x \geq 211$

She needs a score of 211 or more.

⑩ $x = \text{\# of sheets of paper}$

$.52 + .18x \leq 3$
 $.18x \leq 2.48$
 $x \leq 13.7$

You can put 13 sheets of paper in.

⑪ $c = \text{\# of chips}$

$380 + 12c \leq 600$
 $12c \leq 220$
 $c \leq 18.3$

No more than 18 chips

⑫ $S = \text{amount of sales}$

$$450 + \frac{1}{8}S > 2000$$
$$8\left(\frac{1}{8}S\right) > (1550)8$$
$$S > 12400$$

Sales should be
more than \$12400

⑬ $r = \# \text{ ride tickets}$

$$4 + .75r \leq 20$$
$$.75r \leq 16$$
$$r \leq 21.\bar{3}$$

No more than
21 ride tickets

Multi-Step Practice #2

(#6)

① $-2x + 3 > x$

$3 > 3x$

$x < 1$ $(-\infty, 1)$



② $-4x + 36 \geq 2x$

$36 \geq 6x$

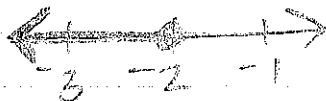
$x \leq 6$ $(-\infty, 6]$



③ $-5x \geq -1x + 8$

$-4x \geq 8$

$x \leq -2$ $(-\infty, -2]$

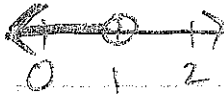


④ $-9x - 4 > 6 - 7x$

$+9x + 4 + 7x + 9x$

$2 > 2x$

$x < 1$ $(-\infty, 1)$



⑤ $6 - 7x \geq 5x - 18$

$+18 + 7x + 7x + 18$

$24 \geq 12x$

$2 \geq x$

$x \leq 2$ $(-\infty, 2]$

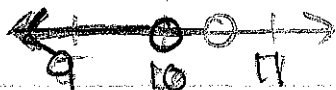


⑥ $8x - 7 < 4x + 33$

$-4x + 7 - 4x + 7$

$4x < 40$

$x < 10$ $(-\infty, 10)$



⑦ $5x - 2 \geq 3x + 10$

$-3x + 12 - 3x + 2$

$2x \geq 12$

$x \geq 6$ $[6, \infty)$



⑧ $-4x - 10 \geq 3x - 31$

$+4x + 31 + 4x + 31$

$21 \geq 7x$

$x \leq 3$ $(-\infty, 3]$



⑨ $1 - 2x > 5 - 3x$

$-1 + 3x - 6 + 3x$

$x > -1$ $(-1, \infty)$



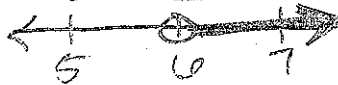
⑩ $12 - 8x < -18 - 3x$

$+18 + 8x + 18 + 8x$

$30 < 5x$

$6 < x$

$x > 6$ $(6, \infty)$



⑪ $4(x-5) > -6x$
 $4x-20 > -6x$
 $-20 > -10x$
 $2 < x$
 $x > 2$ $(2, \infty)$

⑫ $x > -2(x-9)$
 $x > -2x+18$
 $3x > 18$
 $x > 6$ $(6, \infty)$

⑬ $5x+6x-7 \geq 3x+17$
 $11x-7 \geq 3x+17$
 $-3x+17 \geq 3x+17$
 $8x \geq 24$
 $x \geq 3$ $[3, \infty)$

⑭ $x-4x \geq 3x+18$
 $-3x \geq 3x+18$
 $-6x \geq 18$
 $x \leq -3$ $(-\infty, -3]$

⑮ $3(x-2)-2x \leq -10$
 $3x-6-2x \leq -10$
 $x-6 \leq -10$
 $x \leq -4$ $(-\infty, -4]$

⑯ $x-4(x-3) \geq 9$
 $x-4x+12 \geq 9$
 $-3x+12 \geq 9$
 $-3x \geq -3$
 $x \leq 1$ $(-\infty, 1]$

⑰ $14-3(x+3) \geq 4x-2$
 $14-3x-9 \geq 4x-2$
 $-3x+5 \geq 4x-2$
 $7 \geq 7x$
 $1 \geq x$
 $x \leq 1$ $(-\infty, 1]$

⑱ $4(3-2x)+4x < x-3$
 $12-8x+4x < x-3$
 $12-4x < x-3$
 $15 < 5x$
 $3 < x$ $(3, \infty)$

⑲ $20-6(x+4) > -3(x-5)+2$
 $20+6x-24 > -3x+15+2$
 $-4x-4 > -3x+17$
 $-3x > 21$
 $x < -7$ $(-\infty, -7)$

⑳ $3(2x-4)+5x \geq 4(x+3)-x$
 $6x-12+5x \geq 4x+12-x$
 $11x-12 \geq 3x+12$
 $8x \geq 24$
 $x \geq 3$ $[3, \infty)$