

$$|3x+2| = |5x-7|$$

$$3x+2 = |5x-7| \quad \text{OR} \quad 3x+2 = -|5x-7|$$

$$|5x-7| = 3x+2 \quad \quad -|5x-7| = 3x+2$$

$$\underline{5x-7 = 3x+2} \quad \text{OR} \quad 5x-7 = -(3x+2) \quad \quad |5x-7| = -3x-2$$
$$\underline{5x-7 = -3x-2} \quad \text{OR} \quad \underline{5x-7 = -(-3x-2)}$$

So, it boils down to

$$3x+2 = 5x-7 \quad \text{OR} \quad 3x+2 = -5x+7$$

∴ how these are done

$$|3x-7| < -3 \quad \text{Never!}$$

$$|3x-7| > -3 \quad \text{Always}$$

AND $|3x-7| < 3$ \longleftrightarrow
 $3x-7 < 3$ AND $3x-7 > -3$

OR $|3x-7| \geq 3$ $\longleftarrow]$ $[\longrightarrow$
 $3x-7 \geq 3$ OR $3x-7 \leq -3$

6% sales tax
 \$200⁰⁰ in the till to start the day
 \$1100⁰⁰ at end of the day
 How much tax is owed the state?

Let $x =$ the amt of tax owed (\$)
 $y =$ the sales before tax (\$)

\$900 = amt of \$ in.

$$\begin{aligned} \text{Sales} + \text{Tax} &= \text{Sales} + \text{tax} \\ y + .06y &= 900 \\ 1.06y &= 900 && y + .06y \\ y &= \frac{900}{1.06} && y(1 + .06) \\ &&& y(1.06) \end{aligned}$$

Same idea for knowing Discount price,
 but don't know the original price.

$$\begin{array}{l} \text{Price Before} \\ \text{Discount} \end{array} - \text{Discount} = \begin{array}{l} \text{Price after} \\ \text{discount.} \end{array}$$

I got a pair of shoes for \$100 that
 were 20%
 after a 20% discount.

Let $x =$ price before discount.

$$\text{Then } x - .2x = 100$$

$$.8x = 100 \quad \text{ashleigh}$$

$$x = \frac{100}{.8} = 125$$

oops! Forgot Sales Tax is 6%. So what
 was the original price?

\$117.93 is Bobby's guess

① Figure Price after Discount BY taxes

$$x + .06x = 100$$

$$1.06x = 100$$

$$x = \frac{100}{1.06} \approx 94.34$$

↳ Sales price

$$\text{Price Before} - \text{Discount} = \text{Sales Price}$$

$$y - .2y \approx 94.34$$

$$.8y \approx 94.34$$

$$y \approx \frac{94.34}{.8} \approx 117.92$$

Bobby got 117.93, because he rounded to 94.34
 before the 2nd part.

	117.9245283
94.34 / .8	117.925
100 / 1.06	94.33962264
Ans / .8	117.9245283

\$12,000 invested / split into 2 accounts
one pays 10%, the other 7%
The interest earned was \$960, how much
was invested in each account?

Let $x = \text{amt invested @ } 10\% (\$)$
 $y = \text{" " " " } 7\% (\$)$

the invested 12,000 total

$$x + y = 12000$$

Interest was 960.

$$.1x + .07y = 960$$

Bart

$$x + y = 12000$$

$$-x = -x$$

$$y = 12000 - x$$

$$\rightarrow .1x + .07(12000 - x) = 960$$

This is called
"Substitution"
Method

$$|3x-2| < 7$$

$$-7 < 3x-2 < 7$$

$$-5 < 3x < 9$$

$$-\frac{5}{3} < x < 3$$

$$-\frac{5}{3} < x \text{ AND } x < 3$$

~~$$|3x-2| > 7$$

$$-7 > 3x-2 > 7$$

$$-\frac{5}{3} > x > 3$$

$$-\frac{5}{3} > x \text{ OR } x > 3$$~~

Please No

~~$$| \quad | >$$~~ OR

~~$$| \quad | <$$~~ AND

Joseph

$$|\text{☺}| < \Delta$$

$$\text{☺} < \Delta \text{ AND } \text{☺} > -\Delta$$

$$|\text{☺}| > \Delta$$

$$\text{☺} > \Delta \text{ OR } \text{☺} < -\Delta$$

$$\textcircled{1} \quad 25x^2 - 36 = 28$$

2.1

$$\textcircled{2} \quad 16x^2 - 34x + 15 = 0$$

$$\textcircled{3} \quad 2 \left(-\frac{29}{22} \right) - 3y = 4$$

$$\textcircled{4} \quad .12x + .10(15000 - x) = 1600$$

⑤ Solve $2x+3 = cx-7$ for x .

⑥ Solve $h = vt + 16t^2$ for v

2.2

S2.3 See today's notes.

⑦ $-2 + \frac{x}{3} \geq \frac{x}{2} - 5$

2.4

$$h = vt + 16t^2$$

$$16t^2 + vt = h$$

⑧ $2x-5 \leq -1$ OR $-3x-6 < -15$

⑨ $|4 - \frac{2}{7}x| + 2 = 14$

2.5

⑩ $|-\frac{1}{4}x + 1| = |\frac{1}{2}x - \frac{1}{3}|$

#64

$|27x - 19.7\pi| > -1$ Always

397, 842, 91237

⑪ $| -4x + 2 | < 6$

⑫ $| 3x - \frac{3}{5} | < 0.2$

⑬ $| 5x - 7 | < -6$

⑭ $| 3x + 7 | \geq -5$

2.6

EXPECT
S1.6 Scientific
Notation questions.