Try It 1-3

Ex. 1:

1. $-3x = 2x + 20$

$-2x \quad -2x$

$-5x = 20$

$\frac{-5x}{-5} = \frac{20}{-5}$

$x = -4$

* It does not matter which side you move.

2. $2.5y + 6 = 4.5y - 1$

$-2.5y \quad -2.5y$

$6 = 2y - 1$

$+1 \quad +1$

$\frac{7}{2} = \frac{2y}{2}$

$\frac{7}{2} = y$

Ex. 2:

3. $6(4 - z) = 2z$

$24 - 6z = 2z$

$+6z \quad +6z$

$\frac{24}{8} = \frac{8z}{8}$

$3 = z$

4. $5(w - 2) = -2(1.5w + 5)$

$5w - 10 = -3w - 10$

$+3w \quad +3w$

$8w - 10 = -10$

$+10 \quad +10$

$\frac{8w}{8} = \frac{0}{8}$

$w = 0$

Ex. 3:

5. $2x + 1 = 2x - 1$ ← same x's but different constants = no solution

$-2x \quad -2x$

$1 \neq -1$

no solution

6. $6(5 - 2v) = -4(3v + 1)$

$30 - 12v = -12v - 4$

$+12v \quad +12v$

$30 \neq -4$

no solution

Ex. 4:

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

$3t - 2 = 3t - 2$

$-3t \quad -3t$

$-2 = -2$

same x's & same constants = infinite solution

infinite solution

* any number will work as an answer

8. $\frac{1}{3}(2b+9) = \frac{2}{3}(b+\frac{9}{2})$

$\frac{2}{3}b + 3 = \frac{2}{3}b + 3$

$-\frac{2}{3}b \quad -\frac{2}{3}b$

$3 = 3$

infinite solution

Ex. 5:

9. The diameter of the purple circle is 3x. What is the area of each circle?

use Ex: 4 pg. 20

$x + 2 = 1.5x$

$-x \quad -x$

$\frac{2}{.5} = \frac{.5x}{.5}$

$4 = x$

$r = x + 2 = 4 + 2 = 6$

$A = \pi r^2$

$A = \pi 6^2$

$A = 36\pi$

$\frac{d}{2} = r$

$\frac{3x}{2} = r$

$1.5x = r$

Ex. 6:

10. A boat travels 3 hours downstream at r miles per hour (mph). On the return trip, the boat travels 5 miles per hour slower and takes 4 hours. What is the distance the boat travels each way?

d = distance

distance = rate • time

d = rt

* distance going is the same as returning

$d_{going} = d_{returning}$

$r_g t_g = r_r t_r$

$r \cdot 3 = (r-5)4$ * plug in #'s we know

$3r = 4r - 20$ * distribute

$-3r \quad -3r$

$0 = r - 20$

$+20 \quad +20$

$20 = r$

$r - 5 = 15$ mph

20 mph

$20 \text{ mph} \cdot 3\text{h} = 60\text{mi}$

$15\text{mph} \cdot 4\text{h} = 60\text{mi}$