

1. Marlow wants to rent and ride a bike at a state park. There are two parks in his area. One has an entrance fee of \$8 and charges \$2 per hour for bike rentals. The other park has an entrance fee of \$2 and charges \$5 per hour for bike rentals. After how many hours would the cost of renting and riding a bike be the same at both parks?

$$\begin{aligned}
 8 + 2x &= 2 + 5x \\
 -2x \quad -2x & \\
 8 &= 2 + 3x \\
 -2 \quad -2 & \\
 6 &= 3x \\
 \frac{6}{3} &= \frac{3x}{3} \quad X=2
 \end{aligned}$$

2 hours

2. Solve each for x:

a. $5 + \frac{2x+4}{3} = 15$

$$\begin{array}{r}
 5 \qquad \qquad \qquad -5 \\
 \frac{2x+4}{3} \qquad \qquad \qquad -5
 \end{array}$$

b. $3(x+4) + 7 = 3x + 17$

$$3x + 12 + 7 = 3x + 17$$

$$3x + 19 = 3x + 17$$

$$-3x \qquad \qquad \qquad -3x$$

$$19 \neq 17$$

No Solution

c. $\frac{1}{2}(6x+4) = 32 + 2x$

$$3x + 2 = 32 + 2x$$

$$-2x \qquad \qquad \qquad -2x$$

$$x + 2 = 32$$

$$-2 \quad -2$$

$$x = 30$$

3. $\frac{2x+4}{3} = 10 \cdot 3$

$$\begin{array}{r}
 2x+4 = 30 \\
 -4 \quad -4
 \end{array}$$

$$x = 13 \quad \frac{2x}{2} = \frac{26}{2}$$

3. Solve each inequality, then graph your solution on a number line.

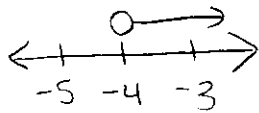
a. $-2(x+1) + 4 < 10$

$$-2x - 2 + 4 < 10$$

$$\begin{array}{r}
 -2x + 2 < 10 \\
 -2 \quad -2
 \end{array}$$

$$\begin{array}{r}
 -2x < 8 \\
 -2 \quad -2
 \end{array}$$

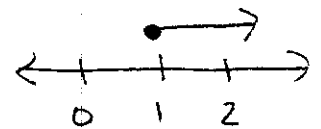
$$x > -4$$



b. $2x - 4x \leq -2$

$$\begin{array}{r}
 -2x \leq -2 \\
 -2 \quad -2
 \end{array}$$

$$x \geq 1$$



4. How many pounds of cashews that cost \$14 per pound must be mixed with 5 pounds of peanuts that cost \$6.50 per pound to make mixed nuts that cost \$10.25 per pound?

$$10.25(x+5) = 14x + 5(6.50)$$

$$10.25x + 51.25 = 14x + 32.5$$

$$\begin{array}{r}
 -32.5 \qquad \qquad \qquad -32.5
 \end{array}$$

$$10.25x + 18.75 = 14x$$

$$\begin{array}{r}
 -10.25x \qquad \qquad \qquad -10.25x
 \end{array}$$

$$18.75 = 3.75x$$

$$x = 5$$

5 pounds
of cashews

5. Solve each for k

a. $\frac{pkq^2}{z^2} = f$

$$\frac{pkq^2}{z^2} = \frac{fz}{z^2}$$

$$k = \frac{fz}{pq^2}$$

b. $\frac{3k(p+r)}{3(p+r)} = \frac{qv}{3(p+r)}$

$$k = \frac{qv}{3(p+r)}$$

6. Solve each equation and state how many solutions it has.

a. $3(1-2x) > 3-6x$

$$3-6x > 3-6x$$

No Solution

b. $2(2x+5) = 4x+3+2$

$$4x+10 = 4x+5$$

$$-4x \quad -4x$$

$$10 = 5$$

No Solution

c. $6-4(6x+7) \geq 122$

$$6-24x-28 \geq 122$$

$$-24x-22 \geq 122$$

$$+22 \quad +22$$

$$-24x \geq 144$$

$$x \leq -6$$

7. Tom is trying to decide whether or not to join a gym to use their basketball courts. The membership will cost \$135 and then the court rental is \$2 each time. Non-members pay \$11 each time. How many times would Tom need to rent in order for it to be cheaper to be a member?

$$135 + 2x < 11x$$

$$-2x \quad -2x$$

$$135 < 9x$$

$$15 < x$$

More than

15 times

8. Trinti had \$500 in a savings account at the beginning of the summer. She wants to have at least \$200 in the account by the end of the summer. She withdraws \$25 each week for food, clothes, and activities.

a. Write an inequality that represents Trinti's situation

$$500 - 25w \geq 200$$

b. How many weeks can Trinti withdraw money from her account?

$$\frac{-25w}{-25} \geq \frac{-300}{-25}$$

$$w \leq 12$$

12 weeks or less