

1. In a parking lot there are 29 vehicles (cars and motorcycles). There is a total of 92 tires in the parking lot (not including spare tires). Write a system of equations and solve to find out how many of each type of vehicle are in the parking lot.

$$\begin{aligned} 2(C+M) &= 29 \\ 4C+2M &= 92 \end{aligned}$$

$C = \# \text{ cars}$
 $M = \# \text{ motor cycles}$

$$\begin{aligned} 2C+2M &= 58 \\ 4C+2M &= 92 \\ \hline -2C &= -34 \\ C &= 17 \\ M &= 12 \end{aligned}$$

2. Two angles are complementary. One angle is 12 more than twice the other angle. Write and solve a system of equations to find the measure of each angle.

$$\begin{aligned} X+Y &= 90 \\ X &= 2Y+12 \end{aligned}$$

$64^\circ \text{ \& } 26^\circ$

$$\begin{aligned} 2Y+12+Y &= 90 \\ 3Y+12 &= 90 \\ 3Y &= 78 \\ Y &= 26^\circ \end{aligned}$$

3. Solve this equation for x . State any restrictions on the variables.

$$d = p + \frac{xy-g}{k}$$

$$x = \frac{k(d-p)+g}{k}$$

$y \neq 0$
 $k \neq 0$

4. Solve this equation for z . State any restrictions on the variables.

$$az - \frac{r+m}{h} = r - \frac{h}{z}$$

$$az + \frac{h}{z} = r + \frac{r+m}{h}$$

$$z(a + \frac{h}{z}) = \frac{r+m}{a}$$

$$\begin{aligned} a + \frac{h}{z} &\neq 0 \\ \text{or} \\ a &\neq -\frac{h}{z} \end{aligned}$$