# CalcMate Solutions

**Question:**

**The perimeter of a rectangular field is 82m and its area is 400m2.**
**Find the breadth of the rectangle**

**Answer:**

Here is a solution to your problem..

**Problem Steps:**

Step1. Let l be the length and b be the breadth.

Step2. The perimeter is given by the equation: 2(l + b) = 8

Step3. The area is given by the equation: l * b = 40

Step4. Rearranging the perimeter equation, we get: l = 41 - b.

Step5. Substituting this into the area equation gives: (41 - b) *
b = 400.

**Equations:**

1: 2(l + b) = 82

2: l * b = 400

3: l = 41 - b

**Solution:**

The value of l ( length ) is 25.The value of b ( breadth ) is 16.

**Question:**

A takes 10 days less than the time taken by B to finish a piece of work. If both A and B together can finish the work in 12 days, find the time taken by B to finish the work.

**Answer:**

Here is a solution to your problem..

### Problem Steps:

Step1. Let x be the time taken by B to finish the work.

Step2. The time taken by A is 10 days less than x:      A = x - 10

Step3. The rate of work done by A is:      Rate of A = 1/(x-10) (work/day)

Step4. The rate of work done by B is:      Rate of B = 1/x (work/day)

Step5. Together, they can finish the work in 12 days: 12 * (Rate of A + Rate of B) = 1

### Equations:

1: A = x - 10

2: 12 * (1/(x-10) + 1/x) = 1

### Solution:

The value of x ( time taken by B to finish the work ) is 30.

**Question:**

**A passenger train takes 3 hours less for a journey of 360 km, if its speed is increased by 10 km/hr from its usual speed. What is the usual speed?**

**Answer:**

Here is a solution to your problem..

**Problem Steps:**

Step1. Let x be the usual speed of the passenger train.

Step2. The distance traveled at the usual speed in 3 hours less is: $360 = (x + 10)(t - 3)$.

Step3. The distance traveled at the increased speed in the same time is: $360 = xt$.

**Equations:**

1: $360 = (x + 10)(t - 3)$

2: $360 = xt$

**Solution:**

The value of x ( usual speed of the passenger train ) is 30.

**Question:**

**A girl is twice as old as her sister. Four years hence, the product of their ages (in years) will be 160. Find their present ages.**

**Answer:**

Here is a solution to your problem..

**Problem Steps:**

Step1. Let x be the girl's age and y be the sister's age.

Step2. Since the girl is twice as old as her sister, we have x = 2y.

Step3. Four years hence, the girl's age will be x + 4 and the sister's age will be y +

Step4. The product of their ages (in years) will be 160:

$(x + 4)(y + 4) = 160$

**Equations:**

1: $x = 2y$

2: $(x + 4)(y + 4) = 160$

**Solution:**

The value of x ( girl's age ) is 12.The value of y ( sister's age ) is 6.

**Question:**

**The sum of two numbers is 25. The difference between five times the first number and three times the second number is 50. Write a system of linear equations to represent this information and find the values of the two numbers.**

**Answer:**

Here is a solution to your problem..

**Problem Steps:**

Step1. Let x be the first number and y be the second number.

The sum of the two numbers is: $x + y = 25$

The difference between five times the first number and three times the second number is: $5x - 3y = 50$

**Equations:**

1: $x + y = 25$

2: $5x - 3y = 50$

**Solution:**

The value of x ( first number ) is 15.625.The value of y ( second number ) is 9.375.

**Question:**

give me the decimals in fractions

**Answer:**

The value of x (first number) is 15 and 5/8. The value of y (second number) is 9 and 3/8.