

### Real World Applications for Proportions / Percentages (A)

( A Ratio is a comparison of two numbers: 2 to 3 or 2:3 )

( A Proportion is a statement of two equal ratios! 3 to 4 = 6 to 8 )

( **Law** : Product of Outside Numbers **equals** Product of Inside Numbers )

( A Percent is a ratio of a Number to 100! 75% equals 75 to 100 )

( A Percent changed to a Proportion: 25% of 8 is 2 25 to 100 = 2 to 8 )

( **Remember**: **Is** number equals Inside & **Of** number equals Outside )

1. An Elementary Class of students has a ratio of Boys to Girls at 2 to 3.  
The class has 10 Boys. How many Girls in class?

$$2 \text{ to } 3 = B \text{ to } G \quad 2 \text{ to } 3 = 10 \text{ to } G \quad 2G = 30 \quad G = 15 \quad \text{Check!}$$

2. A recipe for Chocolate & Raisins cookies has a ratio of Cs to Rs at 3 to 4.  
If 12 Raisins are in the cookies then how many Chocolates?

$$3 \text{ to } 4 = C \text{ to } R \quad 3 \text{ to } 4 = C \text{ to } 12 \quad 36 = 4C \quad 9 = C \quad \text{Check!}$$

3. Tom & Mary went fishing and they caught a ratio of 7 to 5.  
Tom is a better fisher! Mary caught 15 fish. How many did Tom catch?

$$7 \text{ to } 5 = T \text{ to } M \quad 7 \text{ to } 5 = T \text{ to } 15 \quad 95 = 5T \quad 19 = T \quad \text{Check!}$$

4. Jane & Pete created posters for a ball game with a ratio of 5 to 4.  
Jane made more posters and she made 10 posters. How many did Pete make?

$$5 \text{ to } 4 = J \text{ to } P \quad 5 \text{ to } 4 = 10 \text{ to } P \quad 5P = 40 \quad P = 8 \quad \text{Check!}$$

5. ( 50% ) of twelve Beautiful Yellow Bananas is how many?  
Yummy Yellow Bananas! A Percent is a ratio of a Number to 100!

$$50\% \text{ of } 12 \text{ is } B \quad 50 \text{ to } 100 = B \text{ to } 12 \quad 600 = 100B \quad 6 = B \quad \text{Check!}$$

6. What percent of the number twenty-four is 6? These numbers are good friends!  
A Percent is a ratio of a Number to 100!

$$X\% \text{ of } 24 \text{ is } 6 \quad X \text{ to } 100 = 6 \text{ to } 24 \quad 24X = 600 \quad X = 25 \quad \text{Check!}$$

7. ( 75% ) of 24 ounces of Orange Drink is water. Orange Drink is good!  
How many ounces is water?

$$75\% \text{ of } 24 \text{ is } W \quad 75 \text{ to } 100 = W \text{ to } 24 \quad 1800 = 100W \quad 18 = W \quad \text{Check!}$$

8. What percent of 40 Dollars, an investment, is 70 Dollars? Good investment!  
A Percent is a ratio of a Number to 100!

$$X\% \text{ of } 40 \text{ is } 70 \quad P \text{ to } 100 = 70 \text{ to } 40 \quad 40P = 7000 \quad P = 175 \quad \text{Check!}$$

### Real World Applications for Proportions / Percentages (B)

( A Ratio is a comparison of two numbers: 3 to 4 or 3:4 )

( A Proportion is a statement of two equal ratios! 2 to 3 = 4 to 6 )

( **Law**: Product of Outside Numbers **equals** Product of Inside Numbers )

( A Percent is a ratio of a Number to 100! 25% equals 25 to 100 )

( A Percent changed to a Proportion: 75% of 8 is 6 75 to 100 = 6 to 8 )

( **Remember**: **Is** number equals Inside & **Of** number equals Outside )

1. An MS Class of students has a ratio of Boys to Girls which is 3 to 5.  
The class has 6 Boys. How many Girls in class?

$$3 \text{ to } 5 = B \text{ to } G \quad 3 \text{ to } 5 = 6 \text{ to } G \quad 3G = 30 \quad G = 10 \quad \text{Check!}$$

2. A recipe for Cherry & Nut cookies has a ratio of Cs to Ns being 3 to 2.  
If 6 Nuts are in the cookies then how many Cherries?

$$3 \text{ to } 2 = C \text{ to } N \quad 3 \text{ to } 2 = C \text{ to } 6 \quad 18 = 2C \quad 9 = C \quad \text{Check!}$$

3. Mike & Beth went fishing and they caught a ratio of 4 to 5 fish.  
Beth caught more and she caught 10 fish. How many did Mike catch?

$$4 \text{ to } 5 = M \text{ to } B \quad 4 \text{ to } 5 = M \text{ to } 10 \quad 40 = 5M \quad 8 = M \quad \text{Check!}$$

4. Kathy & Jerry created prizes for a class activity with a ratio of 7 to 3.  
Kathy created more prizes and made 14 posters. How many did Jerry make?

$$7 \text{ to } 3 = K \text{ to } J \quad 7 \text{ to } 3 = 14 \text{ to } J \quad 7J = 42 \quad J = 6 \quad \text{Check!}$$

5. ( 50% ) of twenty-four Beautiful Red Apples is how many?  
I really like Red Apples! A Percent is a ratio of a Number to 100!

$$50\% \text{ of } 24 \text{ is } A \quad 50 \text{ to } 100 = A \text{ to } 24 \quad 1200 = 100A \quad A = 12 \quad \text{Check!}$$

6. What percent of the number thirty-two is 8? These numbers are good friends!  
A Percent is a ratio of a Number to 100!

$$(P)\% \text{ of } 32 \text{ is } 8 \quad P \text{ to } 100 = 8 \text{ to } 32 \quad 32P = 800 \quad P = 25 \quad \text{Check!}$$

7. ( 75% ) of 32 ounces Skim Milk is water. Fat Free Skim Milk is good!  
How many ounces is water?

$$75\% \text{ of } 32 \text{ is } W \quad 75 \text{ to } 100 = W \text{ to } 32 \quad 2400 = 100W \quad 24 = W \quad \text{Check!}$$

8. What percent of 60 Dollars, an investment, is 90 Dollars? Good investment!  
A Percent is a ratio of a Number to 100!

$$(P)\% \text{ of } 60 \text{ is } 90 \quad P \text{ to } 100 = 90 \text{ to } 60 \quad 60P = 9000 \quad P = 150 \quad \text{Check!}$$