**Ratio – Problem Solving – www.m4ths.com – Steve Blades ©**

(1) A rectangle has its side lengths in the ratio 2:5. The perimeter of the rectangle is 56. Find the area of the rectangle.
(2) Tim, Fred and Bob share some money. Tim has $\frac{1}{4}$, Fred has $30\%$ and Bob has the rest. Write down the ratio the money was shared in giving your answer in its simplest form.
(3) In a class there are $12$ boys and $15$ girls. $N$ new girls join the class and the ratio of boys to girls is now $1:2$. Find the value of $N$
(4) The ratio $A:B$ is $3:5$ and the ratio $A:C$ is $7:9$. Find the ratio $C:B$
(5) Bill got $68\%$ of the questions right in an exam. Write down the ratio of the number of questions he got right to the number he didn't in its simplest form.
(6) Jack and Paul share some money in the ratio $1:1.2$. Jack has £$6$ less than Paul. How much money was shared?
(7) Write the ratio $5:19$ in the form $1:n$
(8) The ratio of boys to girls in a class is $4:9$. For every one boy how many girls are there?
(9) $A:B = 9:7$. If $A = 22.5$ what is $B$?
(10) In a zoo the ratio of pandas to monkeys is $2:1$ and the ratio of monkeys to tigers is $3:11$. If there are 18 pandas in the zoo how many tigers are there?
(11) Simplify the ratio $\frac{3}{4}:\frac{5}{7}$
(12) Share £$150.40$ in the ratio $1.2:3.5$
(13) One square has side lengths of $2$cm and another has side lengths of $35$mm. Find the ratio of their areas in its simplest form.
(14) For every $2$ bikes in a city there are $3$ cars. Write the ratio of cars to bikes.
(15) Janet plays darts. The ratio of games she wins to games she loses is $11:8$. Given that she plays less than 100 games, what is the maximum number of games she could win?
(16) A right-angle triangle has one angle of $18^o$. Find the ratio of the sizes of the angles in the triangle in their simplest form.
(17) There are $100$ counters in a bag. Write down one ratio they cannot be share in giving your answer in the form $a:b$ where $a$ and $b$ are single digit integers.
(18) $A = 2B$ write the ratio $A:B$
(19) Fred and Janet share some money in the ratio $2:7$. Fred has £$14$. How much was shared?
(20) Share £12 in the ratio 1 : 0.5
(21) There are 8 black counters and $n$ red counters in a bag. The ratio of black to red counters is $2:5$. Now $p$ red counters are removed, and the ratio is of black counters to red counters is $2:3$. Find the value of $n$ and $p$.
(22) As a product of its prime factors $N = 2^3 \times 5 \times 11^3$ and $M = 2^2 \times 5^2 \times 11^2$. Write the ratio $N:M$ in its simplest form without using a calculator.
(23) In a cake the ratio of sugar to flour is $1:n$. The is 4 times as much flour as there is sugar in the cake. Find the value of $n$.
(24) One circle has a radius of $1$ and another has a radius of $2$. Find the ratio of the areas of the circles.
(25) Bob has one and a half as many silver coins as he has gold coins. Write the ratio of the number of silver coins he has to gold coins in the form $m:n$ where $m$ and $n$ are integers
(26) Terry hired a $63$ seat coach for £$550$ for the day. He planned a trip to the seaside. He charged adults £$12$ a ticket and children £$7$ a ticket. The ratio of adults to children on the coach was $11:7$. Show that it's impossible for him to make a profit.
(27) $A$ and $B$ are both double digit square numbers. The ratio $A:B$ is $4:9$. Find the maximum value of $B - A$.
(28) Simplify the ratio $0.7:\frac{3}{5}$
(29) The sizes of $2$ of the angles in an isosceles triangle are in the ratio $1:4$. Show that it's impossible for the triangle to also be a right-angled triangle.
(30) The ratio of $P:Q$ is $1:1.2$ and the ratio of $R:Q$ is $1:1.4$. What is the ratio $P:R$? Give you answer in its simplest form.
(31) $P$ and $Q$ are two different prime numbers. Write the ratio of the two numbers in their simplest form.