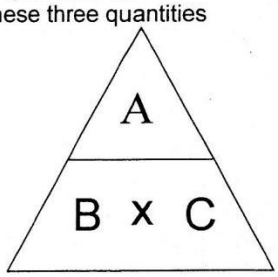
Formula triangle,speed and density

If three quantities A, B and C are in the form of A = B x C, then these three quantities can be written in the formula triangle. Using the formula triangle we can express these three quantities such as



A = B x C

B= A / C

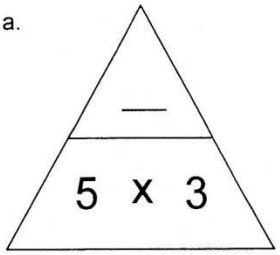
C = A / B

If two quantities are known we can find the remaining quantity using the Formula triangle.
The quantity on the top part is the product of two quantities which are on the bottom part. i.e.
A= B x C

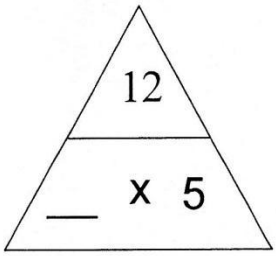
Exercise

1.Find the unknown quantity in the formula triangle.

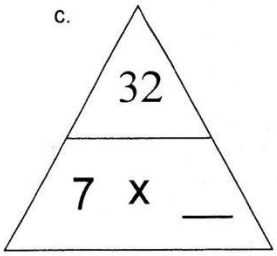
a.



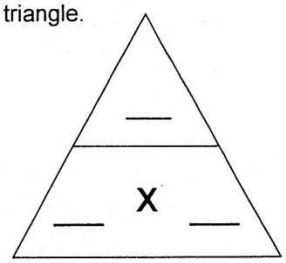
b.



c.



d. Write the formula F = M X A in the formula triangle.



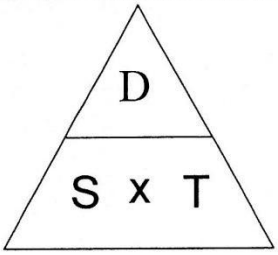
Speed, Distance and Time

The relationship between 3 quantities speed, time and distance can be expressed in three ways:

i) speed = distance/ time

ii) distance = speed x time

iii) time = distance / speed



Formula triangle will help you remember the relationships between distance (*D*), time (*T*) and speed (S)

S= D / T D = S x T T = D / S

2. A cyclist travels a distance of 90 miles in 5 hours. What was her average speed?

3. How far along a motorway would you travel if you drove at 70 mph for 4 hours?

4. I drive to London from Sheffield in about 6 hours.
The distance from Sheffield to London is 315 miles. What is my average speed?

5. The distance from Leeds to London is 240 miles. The train travels at an average speed of 80 mph.
If I catch the 10.30 am train in London, at what time should I expect to arrive in Leeds?

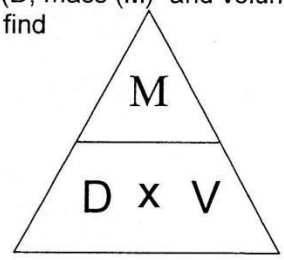
6. How long will an athlete take to run 2000 metres at an average speed of 4 metres per second?

7. The relationship between 3 quantities density (D, mass (M) and volume (V) is given in formula triangle. Use formula triangle to find

i) density(D) = _____

ii) mass(M) =_____

iii) volume(V) =_____



8. The density of gold is 17.23 g / cm³. A gold bar has a mass of 11.3kg.What is its volume?

9. A brick measures 23cm by 11cm by 8cm. It has a mass of 3.2 kg. What is the density of the brick?

10. The volume of a lamp filled with glycerine is 63cm³ and density of glycerine is 1.27g per cm³.What mass of glycerine is required ?