

Using formulae

Part 1: No calculator so show all working

The area of a rectangle is given by: $A=l \times b$; l =length and b =breadth

You must...Find the area of the following rectangles (dimensions are in cm unless otherwise stated):

- a) $l=4$ $b=3$ b) $l=3.2$ $b=4$ c) $l=2.5$ $b=11$ d) $l=0.5$ $b=0.1$
e) $l=32$ $b=14$ f) $l=1.1$ $b=0.5\text{m}$ g) $l=3\text{m}$ $b=25\text{mm}$ h) $l=0.6$ $b=0.3$

The area of a triangle is given by: $A= \frac{1}{2}bh$; b =base, h =height

You should...Find the area of the following triangles (dimensions are in cm unless otherwise stated):

- a) $b=4$ $h=10$ b) $b=12$ $h=14$ c) $b=6$ $h=0.5$ d) $b=2\text{m}$ $h=3$
e) $b=13.2$ $h=0.5$ f) $b=25\text{mm}$ $h=7\text{cm}$ g) $b=1\text{km}$ $h=600\text{cm}$ h) $b=0.1\text{mm}$ $h=0.5\text{cm}$

The area of a trapezium is given by: $A= \frac{1}{2}(a+b)h$; a and b are the parallel sides, h is the height

You could...Find the area of the following trapezium (dimensions are in cm unless otherwise stated):

- a) $a=3$ $b=6$ $h=2$ b) $a=0.5$ $b=1.5$ $h=7$ c) $a=0.25$ $b=17.75$ $h=62$
d) $a=14$ $b=0.5$ $h=2$ e) $a=17$ $b=14$ $h=5$ f) $a=4$ $b=0$ $h=6$

Physics: No calculator so show all working

The energy stored in a spring is given by $E= \frac{1}{2} k x^2$ where x is the extension

Find the energy in the following springs

- a) $k=6$ $x=4$ b) $k=2$ $x=15$ c) $k=14$ $x=15$ d) $k=0.5$ $x=1$
e) $k=0.5$ $x=0.5$ f) $k=0.1$ $x=7$ g) $k=7$ $x=0.1$ h) $k=0.2$ $x=0.1$

Extension: Calculator allowed, but show all steps and calculations

To find the hypotenuse of a right-angled triangle you do: $h = \sqrt{a^2 + b^2}$

Find the hypotenuse for the following:

a) $a=3$ $b=4$

b) $a=5$ $b=12$

c) $a=4$ $b=5$

d) $a=11$ $b=3$

To find the area of a circle you do: $A = \pi r^2$; r =the radius of the circle

Find the area for the following:

a) $r=6$

b) $r=2$

c) $r=100$

d) $r=25$

To find the radius of a circle, given the area, you do: $r = \sqrt{\frac{A}{\pi}}$; A =the area

Find the radius for the following:

a) $A=45$

b) $A=70$

c) $A=32$

d) $A=300$