

Substituting into Formulae

Part 1: (Physics and Mechanics)

At time t , the velocity of an object with constant acceleration a and initial velocity u is given by:

$$v = u + at$$

Find v when:

- | | | |
|---------------------------------|-----------------------------|------------------------------|
| 1) $u=2$, $a=5$ and $t=2$ | 2) $u=3$, $a=6$ and $t=4$ | 3) $u=3$, $a=0$ and $t=3.1$ |
| 4) $u=1.5$, $a=10$ and $t=0.2$ | 5) $u=-3$, $a=6$ and $t=2$ | 6) $u=10$, $a=-3$ and $t=2$ |

Part 2: (Physics)

In electronics; voltage is given by: $V = IR$.

I = current and R =resistance

Find V when :

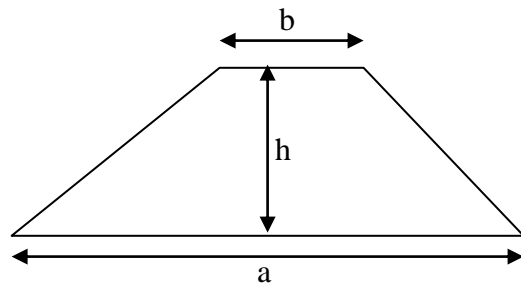
- | | | |
|-------------------------|------------------------|-------------------------|
| 1) $I=6$ and $R=10$ | 2) $I=16$ and $R=14$ | 3) $I=5.2$ and $R=2$ |
| 4) $I=100$ and $R=0.01$ | 5) $I=0.2$ and $R=0.2$ | 6) $I=10000$ and $R=15$ |

Part 3: (Mathematics)

The area of a trapezium is given by $A = \frac{1}{2}(a + b)h$

Find A when:

- 1) $a=1$, $b=2$ and $h=6$
- 2) $a=3$, $b=5$ and $h=2$
- 3) $a=1.5$, $b=2.5$ and $h=5r$
- 4) $a=6$, $b=5$ and $h=3$



Part 4: (Physics and Mechanics)

At time t , the position of an object with constant acceleration a and initial velocity u is given by:

$$S = ut + \frac{1}{2}at^2$$

Find u when:

- | | | |
|-------------------------------|-----------------------------|-----------------------------|
| 1) $u=2$, $t=5$ and $a=4$ | 2) $u=6$, $t=4$ and $a=10$ | 3) $u=3$, $t=9$ and $a=3$ |
| 4) $u=-3$, $t=0$ and $a=1.4$ | 5) $u=4$, $t=6$ and $a=-4$ | 6) $u=3$, $t=-4$ and $a=5$ |

Part 5: (Mathematics)

(Calculator required)

The Volume of a cylinder is given by $V = \pi r^2 h$

Find V when:

- | | | |
|----------------------|--------------------|-----------------------|
| 1) $r=2$, $h=5$ | 2) $r=3$, $h=2$ | 3) $r=10$, $h=6$ |
| 4) $r=0.1$, $h=500$ | 5) $r=0.2$, $h=8$ | 6) $r=15.2$, $h=1.6$ |