

### Question 1

$$y = \frac{3}{4} \sqrt{x}$$

- ## Question 2

$$y = \frac{27}{2\sqrt{x}}$$

- ### Question 3

*y is directly proportional to the square of x*

The constant of the proportionality is  $\frac{4}{5}$

**Question 4**

Write down the equation described by,

*y is inversely proportional to the square root of x*

*The constant of the proportionality is  $\frac{2}{3}$*

**Question 5**

$$y = \frac{1}{2} a b \sin C$$

- ( i )      Tick which applies
- ☐ y is directly proportional to *a*
  - ☐ y is inversely proportional to *a*
  - ☐ y is directly proportional to *b*
  - ☐ y is inversely proportional to *b*
  - ☐ y is directly proportional to the sine of *c*
  - ☐ y is inversely proportional to the sine of *c*
- ( ii )      What is the constant of the proportionality ?
- ( iii )      When *a* = 36, *b* = 25, and *C* = 30° what is *y* ?

**Question 6**

$$A = \pi r^2$$

- ( i )      Tick which applies
- ☐ *A* is directly proportional to the square of *r*
  - ☐ *A* is inversely proportional to the square of *r*
- ( ii )      What is the constant of the proportionality ?
- ( iii )      When *r* = 5, what is *A* ?  
Give your answer to 3 significant figures.
- ( iv )      When *r* = 1.4, what is *A* ?  
Give your answer to 3 significant figures.
- ( v )      When *A* = 100, what is *r* ?

### Question 7

$$T = \frac{D}{S}$$

- ( i )      Tick which applies
- ☐  $T$  is directly proportional to  $D$
- ☐  $T$  is inversely proportional to  $D$
- ☐  $T$  is directly proportional to  $S$
- ☐  $T$  is inversely proportional to  $S$
- ( ii )      What is the constant of the proportionality ?
- ( iii )      When  $D = 5.6$  and  $S = 55.9$  what is  $T$  ?
- ( iv )      When  $T = 28.3$  and  $D = 783$  what is  $S$  ?

### Question 8

A large hole is to be dug in the ground to make a fish pond.  
It is thought that eight men would take 6 days to dig the hole.

- ( i )      How long would ten men take to dig the hole ?
- ( ii )      Is this an example of direct proportion or inverse proportion ?