Higher Maths Sample 1 P1 Q10

1.      Given that $y$ is inversely proportional to $x^2$, and that $y = 5$ when $x = 2$,

   (a)     find an expression for $y$ in terms of $x$.                                    [3]

   (b)     Use the expression you found in (a) to complete the following table.        [2]

| $x$ | 2 | 0·5 | |
|---|---|---|---|
| $y$ | 5 | | 0·2 |

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Higher Maths Summer 2018 P1 Q11

Given that $y$ is directly proportional to $\sqrt{x}$ and that $y = 30$ when $x = 36$,

   (a)    find an expression for $y$ in terms of $x$,                                   [3]

   (b)    use the expression you found in part (a) to complete the following table.    [2]

| $x$ | 36 | 49 | |
|---|---|---|---|
| $y$ | 30 | | 40 |

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Higher Maths Nov 2016 P1 Q11

Given that $y$ is inversely proportional to $x$, and that $y = 4$ when $x = 3$,

   (a)    find an expression for $y$ in terms of $x$,                                   [3]

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   (b)    use the expression you found in (a) to complete the following table.         [2]

| $x$ | 3 | 0·25 | |
|---|---|---|---|
| $y$ | 4 | | $\frac{1}{5}$ |

## Higher Maths Nov 2018 P1 Q12

Catrin is measuring the force between a pair of magnets in a physics laboratory. It is known that the force, $F$, between the magnets is inversely proportional to the square of the distance, $d$, between them.

Catrin measures the force to be 4 newtons when the distance between the magnets is 10 m.

What is the distance between the magnets when the force is 100 newtons?     [5]

## Higher Maths Nov 2017 P1 Q13

Given that $y$ is inversely proportional to $x^3$ and that $y = 120$ when $x = 2$,

(a)    find an expression for $y$ in terms of $x$,     [3]

(b)    use the expression you found in part (a) to complete the following table.     [2]

| $x$ | 2 | 10 | |
|---|---|---|---|
| $y$ | 120 | | 15 |