

## Year 12 Intro 1

### Question 1

Simplify  $d^5 \times d^7$  ..... (1 mark)

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### Question 2

Simplify fully  $2x^2y^3 \times 4xy^2$  ..... (2 marks)

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### Question 3

Simplify fully  $\frac{20x^2y^6}{4x^2y^2}$  ..... (2 marks)

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### Question 4

Simplify fully  $12a^4b^5 \div 2a^2b$  ..... (2 marks)

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### Question 5

Simplify fully  $\frac{a^{11}}{a^2 \times a^5}$  ..... (2 marks)

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### Question 6

Simplify  $(b^5)^3$  ..... (1 mark)

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### Question 7

Simplify  $(5y^3)^2$  ..... (2 marks)

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### Question 8

Simplify  $\frac{(5ab^4)^3}{a^2}$  ..... (3 marks)

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### Question 9

Write  $m^{\frac{1}{2}} \times m^{\frac{3}{2}}$  as a single power of  $m$   
..... (1 mark)

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**Question 10**Expand and simplify  $4(2d + 3) - 2(3d - 5)$ 

..... (2 marks)

**Question 11**Simplify the expression  $\frac{a^3b^2}{a^2b^2}$ 

..... (1 mark)

**Question 12**Factorise  $4x^2 - 7x - 2$ 

..... (2 marks)

**Question 13**Factorise  $6x^2 - 23x - 4$ 

..... (2 marks)

**Question 14** Simplify  $\frac{x^2-4x}{x^2+x-20}$ 

..... (3 marks)

**Question 15** Simplify  $\frac{3x^2-x-10}{x^2-4}$ 

..... (3 marks)

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**Question 16**

Factorise, and hence simplify:  $\frac{4x^2-25}{2x^2-x-10}$

..... (3 marks)

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**Question 17**

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

Make  $x$  the subject of the formula.

..... (3 marks)

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**Question 18**

Change the subject of the following formula to  $v$ .  $p = \frac{mv^2}{2}$

..... (3 marks)

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**Question 19**

Change the subject of the formula  $y = g\sqrt{x} + h$  to  $x$ .

$x =$  ..... (3 marks)

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**Question 20**

Make  $t$  the subject of the formula  $2(d - t) = 4t + 7$

$$t = \dots\dots\dots \text{ (3 marks)}$$

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**Question 21**

Make  $y$  the subject of the formula  $x = \sqrt{\frac{y+1}{y-2}}$

$$y = \dots\dots\dots \text{ (5 marks)}$$

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**Question 22** Make  $x$  the subject of  $P = \frac{100(y-x)}{x}$

$$x = \dots\dots\dots \text{ (4 marks)}$$

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**Question 23** Make  $d$  the subject of  $c = \frac{8(c-d)}{d}$

$$d = \dots\dots\dots \text{ (4 marks)}$$