**Year 12 Intro 1**

**Question 1**

Simplify $d^{5}× d^{7}$  ..........................  **(1 mark)**

**Question 2**

Simplify fully $2x^{2}y^{3}×4xy^{2}$   **.......................... (2 marks)**

**Question 3**

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

**Question 4**

Simplify fully $12a^{4}b^{5}÷2a^{2}b$   **.......................... (2 marks)**

**Question 5**

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

**Question 6**

Simplify $\left(b^{5}\right)^{3}$   **.......................... (1 mark)**

**Question 7**

Simplify $(5y^{3})^{2}$   **.......................... (2 marks)**

**Question 8**

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

**Question 9**

Write $m^{\frac{1}{2}}× m^{\frac{3}{2}}$  as a single power of $m$

  **........................ (1 mark)**

**Question 10**

Expand and simplify $4\left(2d+3\right)-2\left(3d-5\right)$

 **.......................... (2 marks)**

**Question 11**

 Simplify the expression $\frac{a^{3}b^{2}}{a^{2}b^{2}}$   **.......................... (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)**

**Question 16**

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

 **.......................... (3 marks)**

**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)**

**Question 18**

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

 **.......................... (3 marks)**

**Question 19**

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

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

**Question 20**

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

$t=$  **.......................... (3 marks)**

**Question 21**

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

$y=$  **.......................... (5 marks)**

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

$x=$  **.......................... (4 marks)**

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

$d=$  **.......................... (4 marks)**