**1**  Work out the value of $2^4$

.........................................

**(Total for Question 1 is 1 mark)**

**2**  Work out the value of $3^5$

.........................................

**(Total for Question 2 is 1 mark)**

**3**  Find the value of $6^5$

.........................................

**(Total for Question 3 is 1 mark)**

**4**  Here is a list of numbers.

4        6        9        10        15        27        30        40

From the list, write down all the numbers that are powers of 3

.........................................

**(Total for Question 4 is 1 mark)**

**5** $p^3 \times p^x = p^9$

(a) Find the value of $x$.

$x =$ ................................................

**(1)**

$(7^2)^y = 7^{10}$

(b) Find the value of $y$.

$y =$ ................................................

**(1)**

$100^a \times 1000^b$ can be written in the form $10^w$

(c) Show that $w = 2a + 3b$

**(2)**

**(Total for Question 5 is 4 marks)**

**6** Work out the value of $\dfrac{3^7 \times 3^{-2}}{3^3}$

......................................

**(Total for Question 6 is 2 marks)**

**7** (a) Simplify $m^3 \times m^4$

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

(b) Simplify $(5np^3)^3$

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

(c) Simplify $\dfrac{32q^9 r^4}{4q^3 r}$

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

**(Total for Question 7 is 5 marks)**

**8** (a) Simplify $(p^2)^5$

..................................................

(1)

(b) Simplify $12x^7y^3 \div 6x^3y$

..................................................

(2)

**(Total for Question 8 is 3 marks)**

**9** (a) Simplify  $n^3 \times n^5$

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

(b) Simplify  $\dfrac{c^3 d^4}{c^2 d}$

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

(c) Solve  $\dfrac{5x}{2} > 7$

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

**(Total for Question 9 is 5 marks)**

**10** (a) Simplify $c^5 \div c^2$

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

(b) Simplify $(d^4)^3$

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

**(Total for Question 10 is 2 marks)**

**11** Simplify $(2^{-5} \times 2^8)^2$

Give your answer as a power of 2

.......................................

**(Total for Question 11 is 2 marks)**