Topic Test 1 (20 minutes)

Factors and multiples - Higher

1 $x = 3^2 \times 5$ $y = 2 \times 5^2$

Circle the lowest common multiple of x and y.

[1 mark]

5 30 450 2250

2 (a) Write 280 as a product of its prime factors.

[2 marks]

Answer _____

2 (b) $588 = 2^2 \times 3 \times 7^2$

Work out the highest common factor of 280 and 588

[2 marks]

Answer _____

3 a, b and c are **different** prime numbers.

Work out a set of values for a, b and c so that $a + b = 2c$

[2 marks]

$a =$ _____ $b =$ _____ $c =$ _____

4 A number is

- an **odd** multiple of 3
- a common factor of 180 and 750

Work out the **greatest** possible value of the number.

[3 marks]

Answer _____

5 $x = 2^2 \times 5^2 \times 11^4$

Circle the square root of x.

[1 mark]

110 128 1210 732 050

6 a and b are two numbers between 0 and 100

a is a prime number.
b is three times a.

Work out the smallest and largest possible values of $a + b$

[3 marks]

Smallest _____

Largest _____

7 Which of these is **not** a square number?

Circle your answer.

[1 mark]

$2^2 \times 4^3$ $2^2 \times 8^3$ $2^2 \times 5^4$ $2^2 \times 3^2 \times 5^2$

8 A menu has 8 starters, 6 main courses and 6 desserts.

Beth wants a starter and a main course.
Chen wants a main course and a dessert.

How many **more** possible combinations can Beth have than Chen?

[2 marks]

Answer _____

9 A padlock has a four-digit code.
Each digit can be 1, 2, 3, 4, 5 or 6
For example,

3	6	6	2

The fourth digit must be an even number.

How many possible codes are there?

[3 marks]

Answer _____