## 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 $y$.

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

Answer

2 (b) $588=2^{2} \times 3 \times 7^{2}$
Work out the highest common factor of 280 and 588
$3 \quad a, b$ and $c$ are different prime numbers.
Work out a set of values for $a, b$ and $c$ so that $\quad a+b=2 c$
[2 marks]
$\qquad$
$\qquad$
$\qquad$
$\qquad$

$$
a=\quad b=\quad c=
$$

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.
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer
$5 \quad x=2^{2} \times 5^{2} \times 11^{4}$
Circle the square root of $x$.
$6 \quad a$ 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]
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Smallest $\qquad$

Largest

7 Which of these is not a square number?
Circle your answer.
$2^{2} \times 4^{3}$
$2^{2} \times 8^{3}$
$2^{2} \times 5^{4}$
$2^{2} \times 3^{2} \times 5^{2}$

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?
$\qquad$
$\qquad$
$\qquad$

Answer

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


The fourth digit must be an even number.
How many possible codes are there?
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Answer

