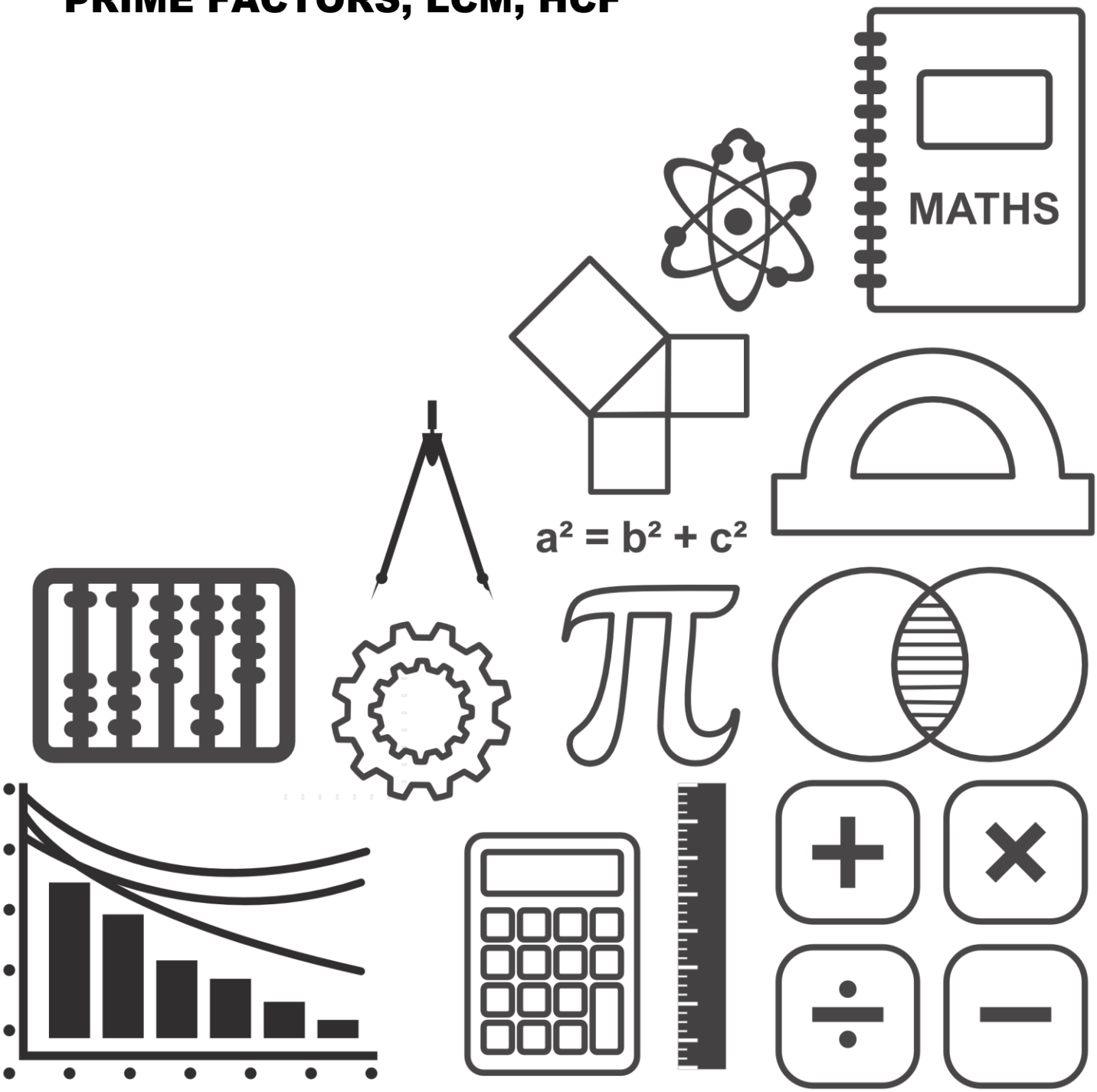
GCSE TOPIC BOOKLET
PRIME FACTORS, LCM, HCF



1.

(a) Express 80 as a product of prime factors. [2]

(b) Find the lowest common multiple of 80 and 24. [2]

(c) Find the highest common factor of 80 and 24. [1]

(d) (i) Write 1200 as a product of prime factors using index notation.

[3]

(ii) Write down the smallest possible number by which 1200 has to be multiplied to create a perfect square.

[1]

2.

(a) Find the highest common factor of 90 and 105.

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[2]

(b) Find the lowest common multiple of 90 and 105.

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[2]

(c) Express 936 as a product of prime numbers in index form.

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[3]

3.

(a) Find the highest common factor of 120 and 140. [1]

(b) Find the lowest common multiple of 14 and 22. [2]

(c) Express 180 as a product of prime numbers using index notation. [3]

4.

Jack makes the following statements.

- 36 and 60 are both common factors of 180.
- The highest common factor of 36 and 60 is **not** a factor of 180.

Decide whether each of Jack's statements is correct.
You must show your working and give a reason for your answer.

[3]

5.

(a) Find the highest common factor of 30 and 75.

[1]

(b) Find the lowest common multiple of 6 and 21.

[2]

6. (a) Express 700 as a product of prime numbers in index form.

[3]

(b) Use your result in part (a) to write down the smallest multiple of 700 which is a perfect square.

[1]

7. (a) Express 240 as a product of prime numbers in index form. [3]

(b) Use your answer to part (a) to write down 240^2 as a product of prime numbers in index form. [1]

8. (a) Write 504 as a product of prime factors using index notation. [3]

(b) (i) Express 600 as a product of prime factors using index form. [3]

(ii) What is the least number 600 should be multiplied by to give an answer that is a square number? [1]

9. Write 800 as a product of prime factors using index notation. [3]

10. *(a)* Express 396 as a product of prime numbers in index form. [3]

(b) y^2 is the smallest square number that is a multiple of 396.

$$\ldots\ldots \times 396 = y^2$$

Write down the value of y. [2]

$y =$ .....