



1) Copy and complete the following table. (8)

Number	N	N ₀	Z	Q	Q'
$\sqrt{2}$					
5					
$\sqrt{9}$					
-8					
150,25					
0					
π					
0,3					

[8]

2) Calculate the following:

- 2.1) -6×3 (1)
 2.2) $-6 \times (-3)$ (1)
 2.3) $2 - 4 - (-8)$ (2)
 2.4) $(2)(-3) + (-1)$ (2)
 2.5) $-8 - (-15)$ (2)
 2.6) $\frac{(10)(-3)}{5} + 10$ (3)

[11]

2) Evaluate the following:

- 2.7) 2^2 (1)
 2.8) -5^2 (1)
 2.9) $(-5)^2$ (1)
 2.10) $(-2)^3$ (1)
 2.11) $\sqrt{64}$ (1)
 2.12) $-\sqrt{64} + \sqrt[3]{(-27)}$ (3)
 2.7) $5 \times \sqrt[3]{64} - 8 \times \sqrt[3]{(-8)}$ (3)

[11]

3) Answer the following question WITHOUT the use of a calculator

- 3.1) Write 324 as a product of its prime factors. (3)
 3.2) Use your answer to find the square root of 324. (show your working) (2)

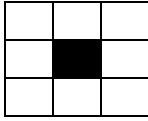
[5]

4) Extend the following number patterns by giving the next three numbers:

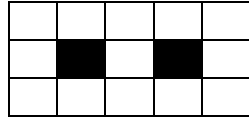
- 4.1) 1; 4; 9; 16; _____; _____; _____ (3)
 4.2) 11; 7; 3; -1; _____; _____; _____ (3)
 4.3) -100; -44; 12; _____; _____; _____ (3)

[9]

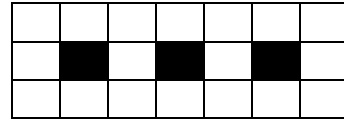
5) Study the patterns below and answer the questions that follow:



Pattern 1



Pattern 2



Pattern 3

5.1) Copy and complete the following table. (2)

Black Blocks (b)	1	2	3	
White Blocks (w)	8	13		23

5.2) Write down a mathematical formula to represent the relationship between the black blocks (b) and the white blocks (w). (2)

5.3) Which variable is the independent variable? (1)

5.4) Which variable is the dependent variable? (1)

[6]

{TOTAL: 50 MARKS}