Multiple-choice section – choose the correct answer

Question 1 [11.1]

Which of the following are irrational numbers?

, 4.5, , , 

A only B ,and  C , 4.5 and  D and 

Question 2 [11.1]

The value of  is between:

A 4 and 5 B 8 and 9 C 10 and 7 D 16.9 and 17.1

Question 3 [11.2]

 can be simplified to:

**A** 14 **B** 2 **C** 2 **D**  4

Question 4 [11.2]

6 × 5 can be simplified to:

**A** 180 **B** 30 **C** 18 **D** 10

Question 5 [11.2]

When simplified completely  becomes:

**A**  **B**  **C**  **D** 

Question 6 [11.3]

7 – 3simplifies to:

A 4 B 4 C 8 D 5

Question 7 [11.4]

The product of 5 +  and 3 –  is:

**A** 13 – 2 **B** 17 – 8 **C** 13 **D** 8

Multiple-choice results: \_\_\_ / 7

Short answer section

Question 8 2 marks [11.1]

Choose from the following words to complete the sentences below.

base coefficient index irrational number power surd

 is an example of a \_\_\_\_\_\_\_\_\_ or an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Question 9 4 marks [11.3]

Simplify: + 5

Question 10 4 marks [11.4]

Expand and simplify 2(3 + ).

Question 11 2 marks [11.1]

Write two irrational numbers with values between 10 and 15.

Question 12 2 marks [11.2]

Express 7as an entire surd.

Question 13 3 marks [11.4]

If a square has sides that measure ( + ) cm, what is its exact area?

Question 14 10 marks [11.5]

Write as single fractions with rational denominators:

(a)  (b) 

(c)  (d) 

Short answer results: \_\_\_ / 27

Extended answer section

Question 15 8 marks [11.2, 11.4]

A rectangular swimming pool has an area of 120 m2.

(a) If its length is twice as long as its width, find the exact dimensions of the pool.

(b) Find the exact perimeter of the pool.

(c) A 1 m wide path is to be made around the perimeter of the pool. Find the exact area of the path.

Question 16 8 marks [11.1, 11.2, 11.5]

A piece of string is (10 + ) cm long.

(a) How many pieces (2 + ) cm long can be cut from the string?

(b) What exact length of string is left over?

(c) What exact fraction of the string is left over?

Extended answer results: \_\_\_ / 16

TOTAL test results: \_\_\_ / 50