



**SASTRI COLLEGE**  
**DEPARTMENT OF MATHEMATICS**  
**MARCH CONTROL TEST- 2020**  
**MATHEMATICS**  
**GRADE 9 - 10/03/2020**



**DURATION: 1 HOUR**  
**EXAMINER: B. NYUNGWE**

**MARKS: 50**  
**MODERATOR : I.RAMKLOWN**

**INSTRUCTIONS:**

1. Answer ALL questions
2. Number your answers as the questions are numbered exactly.
3. Write neatly and legibly.
4. Approved scientific calculators may be used.
5. Round off all answers to TWO decimal places unless told otherwise.

**QUESTION 1**

1.1 Is  $5\pi$  a rational or an Irrational number? (1)

1.2 Solve for  $x$ :

1.2.1  $2x - 8 = 12$  (2)

1.2.2  $3(3x - 1) + 2 = 5x$  (3)

1.3 Simplify the following:

1.3.1  $1\frac{2}{3} + \frac{5}{2} - \frac{1}{3}$  (2)

1.3.2  $3\frac{1}{2} \times 8 \div \frac{4}{7}$  (2)

1.3.3  $\frac{(-3a^2b)^2}{(2ab^2)^3}$  (3)

[13]

**QUESTION 2**

Determine the product of each that follow and simplify:

2.1  $2x - 3(1 - x)$  (2)

2.2  $\frac{1}{2}(12a^2 - 8a + 4)$  (2)

2.3  $(2x - 3)(x + 2)$  (3)

2.4  $(2x + 1)(2x - 1)$  (2)

[9]

**QUESTION 3**

3.1 Write down the next two terms of the following number patterns:

3.1.1 1; 4; 9; 16; 25; \_\_\_\_\_; \_\_\_\_\_; ... (1)

3.1.2 3; 6; 12; 24; \_\_\_\_\_; \_\_\_\_\_; ... (1)

3.2 A sequence 3; 8; 13; 18; ... .. is given.

3.2.1 Write down the next two terms of the sequence. (1)

3.2.2 Determine the general rule ( $n^{\text{th}}$  term). (2)

3.2.3 Calculate the 30<sup>th</sup> term. (2)

[7]

#### QUESTION 4

4.1 Decrease 40kg by 15% (2)

4.2 Thabo's Van uses 1 litre of fuel to travel 12km. How much fuel is needed to travel 420 km? (2)

4.3 There are 44 boys and girls in Mary's class. The ratio of the number of boys to the number of girls is 5: 6. How many boys and girls are there in Mary's class? (3)

[7]

#### QUESTION 5

5.1 Ruhan buys a computer costing R12 000. He pays a 20% deposit and takes out a 2 year hire purchase loan on the balance. The interest rate charged on the loan is 12% per annum simple interest.

Calculate the:

5.1.1 deposit paid. (1)

5.1.2 loan amount. (1)

5.1.3 monthly instalment. (2)

5.2 Jared invests R7500 for 5 years. He has a choice of two investment options:

Option A: 10,5% p.a. compound interest.

Option B: 12,4% p.a. simple interest.

Which is the better option? Show all your working details. (4)

5.3 If 11¥ (Yen) is equal to R1. How much money in Yen, would you get if you had R250? (2)

[10]

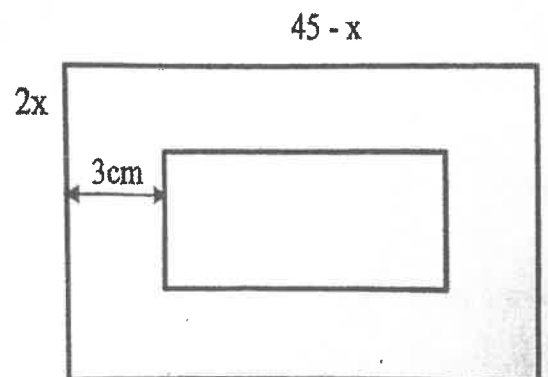
#### QUESTION 6

The diagram shows a sketch of a rectangular mirror with a wooden frame 3cm wide surrounding it. The measurements of the frame along the outer edges are  $(45 - x)\text{cm}$  and  $2x$  respectively.

6.1 Express the length of the mirror in terms of  $x$ . (1)

6.2 Express the breath of the mirror in terms of  $x$ . (1)

6.3 Calculate the area of the mirror in terms of  $x$  (2)



[4]

TOTAL MARKS : 50