



basic education

Department
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REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS NATIONAL SENIOR CERTIFICATE EXAMINATIONS

MATHEMATICS P1

2021

MARKS: 100

TIME: 1 hour

This question paper consists of 10 pages and 1 information sheet.

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QUESTION 1

- 1.1 Solve for x :
 - 1.1.1 $x^2 + 3x + 2 = 0$ (5)
 - 1.1.2 $3x^2 + x - 4 = 0$ (Show partial solution in TWO distinct parts) (10)
 - 1.1.3 $x^2 = 49$ (5)
- 1.2 Given $y = \frac{3x^2 + 5}{x}$
 - 1.2.1 Solve for x (5)
 - 1.2.2 Hence solve for x : $2x^2 + 22x = 48$ (5)
- 1.3 Without using a calculator, calculate the value of $\sqrt{\frac{36x^2 + 25}{12x^2}}$ (5)
- 1.4 Solve for x and y simultaneously:
 $(x + y + 2) = \frac{1}{x}$ and $\frac{1}{y} = 4y + 1$ (10)

QUESTION 2

- 2.1 The first term of an arithmetic sequence is 2 and the 17th term is 38.
 Determine:
 - 2.1.1 d , the common difference of the sequence (5)
 - 2.1.2 The number of terms in the sequence if the last term of the sequence is 47 (5)
 - 2.1.3 The sum of the first 40 terms in the sequence (5)
- 2.2 $16, 25, 36, 49, \dots$ is a quadratic number pattern.
 - 2.2.1 Write down the 100th term of the number pattern (5)
 - 2.2.2 Determine the n^{th} term of the number pattern (5)
 - 2.2.3 Determine the maximum value of the following number pattern:
 $-12, -\frac{1}{2}, \frac{1}{2}, 1, \frac{3}{2}, 2, \dots$ (5)

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