

**Grade 8 : ASSIGNMENT**



**Total: 30 marks**

Exponents

Square, cubes and roots

Scientific notation

Patterns and relationships

**INSTRUCTIONS**

**Read the following instructions carefully before answering the questions.**

1. This Assignment consists of 4 questions.

3. **Answer ALL questions on this task sheets.**

1. Write your name and surname as well as your class section in the spaces provided and hand in the whole answer sheet.
2. Clearly show all steps of calculations.
3. Answers only will not necessarily be awarded full marks.
4. An approved scientific calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. If necessary, answers should be rounded off to TWO decimal places, unless stated

otherwise.

1. Write legibly, neatly and use a blue ink pen.

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| **QUESTION 1 Calculate the following:**    2. **123** 3. **55**    **[ 5 marks]** |
| **QUESTION 2: Calculate the following:**      4. **[ 5 marks]** 5. (-15)2 |
| **QUESTION 3: Calculate the following:**   1. 4(12 + 9) = (4 x 12) + (4 x 9) = 48 + 36 = 84 2. 135÷ 132 = 33 = 2179 3. =  = 5 4. √0,09 = 0,3 5. Write in scientific notation : 25 million = 2,5 x 107   **[5 marks]** |
| **Question 4: Describe the pattern in words:**  **a)** 2; -4; 8, -16, 32 (1)  **b)** 1, 2, 4, 7, 11, 16 ... (1)    **c)**  Study the pattern below:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Position in pattern | 1 | 2 | 3 | 4 | 10 | | Term | 1 | 8 | 27 | 64 | ? |   Describe the rule. (1)  Determine the 10th term: (1)  **[ 5 marks]** |
| **Question 5**  Given:    ***y*** = –3***x*** – 1  **0 -1**  **3 -10**  **5 -16**  **7 -22**  Fill in the output values for this flow diagram  **[ 4 marks]** |
| **Question 6:**  The relationship between a son`s age ( years) and his mother`s age is given as .  What will the mother`s age be when the son is 11 years old?  **[ 2 marks ]** |
| **Question 7:**  A salesman sold twice as much pears in the afternoon than in the morning. If he sold 360 kilograms of pears that day, how many kilograms did he sell in the morning and how many in the afternoon? |

**TOTAL : 30**



**MEMORANDUM**



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| QUESTION 1   1. 81 2. 1728 3. 3125 4. 16 5. 1   [ 5 marks] |
| QUESTION 2   1. 13 2. 0,5 3. 0,25 4. 8 5. 225 [5 marks] |
| **QUESTION 3: Calculate the following:**   1. 4(12 + 9) = (4 x 12) + (4 x 9) = 48 + 36 = 84 2. 135÷ 132 = 33 = 2179 3. =  = 5 4. √0,09 = 0,3 5. 25 million = 2,5 x 107   **[5 marks]** |
| **Question 4: Describe the pattern in words:**  **a)** 2; -4; 8, -16, 32 each number is multiplied by -2 √(1)  **b)** 1, 2, 4, 7, 11, 16 ... increase the difference between consecutive terms√ by  1 and add to the previous term √(2)  **c)**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Position in pattern | 1 | 2 | 3 | 4 | 10 | | Term | 1 | 8 | 27 | 64 | ? |   Describe the rule: Each term is obtained by calculating the cube of the position of the term. √ (1)  Determine the 10th term: 10 x 10 x 10 = 1000 √ (1)  **[ 5 marks]** |
| **Question 5**  Given:    ***y*** = –3***x*** – 1  **0 -1 √**  **3 -10 √**  **5 -16 √**  **7 -22 √**  Fill in the output values for this flow diagram  **[ 4 marks]** |
| **Question 6:**  The relationship between a son`s age( years) and his mother`s age is given as .  What will the mother`s age be when the son is 11 years old?  25 +11 = 36 years. The mother will be 36 years old.  **[ 2 marks ]** |
| **Question 7:**  Let  be the number of kilograms he sold in the morning. Then in the afternoon he sold  kilograms. So, the total is . This must be equal to 360. =360√ = √ =120√ Therefore, the salesman sold 120 in the morning and 2⋅120=240  in the afternoon. √  **[ 4marks ]** |