



AdeTom Tutors

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Mathematics Test

TOTAL: 210. Working out to be shown!!!

1. Tumelo has two pieces of ribbon of lengths 18 *cm* and 24 *cm* respectively. She wants to cut both pieces into smaller pieces of equal length that are as long as possible. What would be the length of each smaller piece? **[3]**
2. A cinema runs its movies in two different halls $24/7$. One movie runs for 80 minutes and the second one runs for 120 minutes. Both movies start at 1.00 p.m. When will the movies begin again at the same time? **[4]**
3. Define the following terms and give an example of each **[2x9]**
 - a) Rational number
 - b) Square root
 - c) Irrational number
 - d) Integer
 - e) Whole number
 - f) Natural Number
 - g) Cube root
 - h) Algebraic expression
 - i) Algebraic equation
4. Solve the following using prime factorisation **[4x10]**
 - a) $\sqrt{9}$
 - b) $\sqrt[3]{125}$
 - c) $\sqrt{64}$
 - d) $\sqrt{576}$
 - e) $\sqrt[3]{-8}$
 - f) $\sqrt[3]{-216}$
 - g) $\sqrt[3]{1000}$
 - h) $\sqrt[3]{64}$
 - i) $\sqrt[3]{2197}$
 - j) $\sqrt[3]{1331}$

5. List the prime numbers less than 40 **[2]**
6. Find the greatest number that divides 304 to leave a remainder of 4 and which also divides 298 to leave a remainder of 4. Check your answer **[3]**
7. Write the following as a product of its prime numbers **[4x2]**
 - a) 18
 - b) 21
 - c) 52
 - d) 63
8. Write the following as a product of its prime numbers in index form **[4x2]**
 - a) 56
 - b) 23
 - c) 124
 - d) 49
9. Determine the HCF of the following **[3x3]**
 - a) 20; 8
 - b) 32; 36; 52
 - c) 16; 24; 56
10. Determine the LCM of the following **[3x3]**
 - a) 54; 60; 90
 - b) 18; 20; 22
 - c) 34; 119; 196
11. Write Algebraic expressions for each of the following **[2x9]**
 - a) A number divided by seven
 - b) Twelve less a certain number plus four
 - c) The product of five and seven
 - d) The sum of the additive inverse of three and the multiplicative inverse of 2
 - e) Six more than a certain number
 - f) A certain number less than six
 - g) A number repeated as a term three times
 - h) A certain number times itself
 - i) The product of the square of a number and the cube of the same number
12. A computer costs R5999. The shop requires a 10% deposit and the rest will be paid in equal monthly instalments over a three-year period at an interest rate of 14%*p. a.* Find the monthly instalments. **[4]**

13. Solve the following linear equations [13x3]

- a) $6r + 7 = 13 + 7r$
- b) $-7x - 3x + 2 = -8x - 8$
- c) $13 - 4x = 1 - x$
- d) $-8 - x = 8 - 4x$
- e) $n + 2 = -14 - n$
- f) $\frac{x}{4} = 8$
- g) $\frac{x+3}{2} = 7$
- h) $\frac{x}{3} = 2x + 1$
- i) $3 + x = \frac{x}{4}$
- j) $\frac{x+1}{6} + \frac{1}{6} = 3$
- k) $5 + \frac{x}{7} = 7$
- l) $-14 + 6b + 7 - 2b = 1 + 5b$
- m) $-8n + 4(1 + 5n) = -6n - 14$

14. Complete the following table using the rule $y = 2x + 5$ [1x5]

x	12		3		40
y		15		37	

15. In the expression $16x^3 - 9x^2 + 10x - 1$ [2x5]

- a) How many terms are in the expression?
- b) Write down the coefficient of x^2 .
- c) What is the value of the constant term?
- d) Calculate the value of the expression when $x = 3$ and when $x = \frac{1}{2}$
- e) Write down the degree of the expression

16. Solve the following [4x3]

- a) $\frac{4}{11}$ of soccer team players are injured and not able to play. Of those that are uninjured, $\frac{1}{11}$ is sick and not able to play. What fraction of the players is able to play?
- b) Moloko got her Maths test back and was very happy about getting 85% for the test. To get the full marks for the test she would need to get 60 marks. How many marks did she lose?
- c) Maps and Bassie are in the same Mathematics class. Maps has completed $\frac{17}{24}$ of her homework and Bassie has $\frac{9}{13}$ of her homework. Who has completed more of the homework?
- d) If one South African rand is valued at 0.125 of one euro, one South African rand will be valued at what fraction to the euro? Can you calculate what one euro will cost in rand?

17. Set up algebraic equations and solve them. **[7x4]**

- a) Nelly is on page 84 of her book. The book has 250 pages. How many pages does she still have to read?
- b) Timothy buys x amount of toffees. He has 8 left from yesterday. if today he eats half of all the toffees he bought, he will have 3 left for tomorrow. how many did he buy?
- c) The sum of six times a certain number and seven is 19
- d) The length of a rectangle is four cm more than its width. If its perimeter is 20cm , determine the width.
- e) A father is three time as old as his son. In ten years' time their combined ages will 68. How old are they now?
- f) In a given amount of time, Mr Whitehead drove twice as far as Mrs Madibana. Altogether they drove 180km . Determine the number of km driven by each.
- g) Determine two numbers such that the sum of three times the first and twice the second is 40. The first number, increase by two then multiplied by 5 is also 40