868

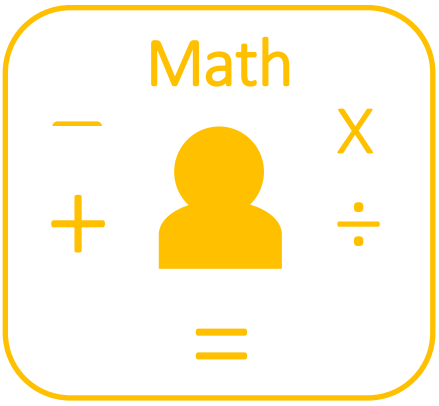
868TUTORS

TUTORS

Preparation for

High School Mathematics

Algebra



Instructions and Tips:

- ✓ **You have 90 minutes to complete this worksheet**
- ✓ **This worksheet consists of 13 questions**
- ✓ **Write answers in the spaces provided**
- ✓ **All working must be clearly shown**

Student Name: _____

Student ID: _____

Date: _ _ / _ _ / _ _ _ _

Total Score:

Highest Score:

Tutor's Comments:

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Question 1

For each question below, perform the appropriate substitution and determine the final result.

m = 10 n = 2 p = 3

(a) 5n + 2p =

(b) 3m - 6p =

(c) 2n + 3n + 2p =

(d) 3m + 3p =

(e) 6mnp =

(5 marks)

Question 2

For each question below, perform the appropriate substitution and determine the final result.

x = 1 y = 2 z = 3

(a) $2x + 2y + 2z$ =

(b) $3x - 3y + z^3$ =

(c) $3z + 2x + 2y$ =

(d) $4xzy^2$ =

(e) $6xyz$ =

(5 marks)

Question 3

For each question below, perform the appropriate substitution and determine the final result.

q = 0 r = 1 s = 2

(a) $2q + 2r + 2s^q$ =

(b) $3q + s^3$ =

(c) $3r + 2r^3$ =

(d) $4rqs^2$ =

(e) 4rs =

(5 marks)

Question 4

For each question below, perform the appropriate substitution and determine the final result:

t = 0 u = 1 v = 2

(a) $\frac{2v}{u}$ **=**

(b) $\frac{2t}{u}$ **=**

(c) $\frac{(2v)^2}{u}$ **=**

(d) $\frac{2v^2}{u}$ **=**

(4 marks)

Question 5

Simplify the following algebraic expressions:

(a) 3a + 6a + 2a

(b) 2y + 11y + 3y

(c) 3z + 2z - 1z

(d) 5y + 10y - 2y

(e) 6c + 2c - 1c

(5 marks)

Question 6

Simplify the following algebraic expressions:

(a) $\frac{3c^2}{\mathrm{c}}$

(b) $\frac{9a^3}{9\mathrm{a}}$

(c) $\frac{10\mathrm{b}^4}{2\mathrm{b}}$

(d) $\frac{3c^2}{c^5}$

(4 marks)

Question 7

(a)

One Snow Cone costs s dollars

One Pack of Kurma costs p dollars

Write an expression for the total cost of 7 snow cones and 5 packs of Kurma.

(b)

One Tamarind Ball costs x cents

One Salted Prune costs y cents

Write an expression for the total cost of 10 Tamarind Balls and 20 Salted Prunes.

(c)

One Soursop costs m cents

One Guava costs p cents

Write an expression for the total cost of 15 soursops and 12 guavas.

(3 marks)

Question 8

Simplify the following algebraic expressions:

(a) 3pq + 6mn + 2pq - 2mn

(b) 2bc + 1gr + 3bc - 6gr

(c) p × p × p × q × q × q

(d) 6b × 3q

(4 marks)

Question 9

Make the letter indicated in brackets the subject of the formula of the following formulae:

(a) F = ma **[a]**

(b) v = u + at **[u]**

(c) M = frs **[r]**

(d) g = ft **[t]**

(4 marks)

Question 10

Make the letter indicated in brackets the subject of the formula of the following formulae:

(a) $Y = \frac{10b^2}{\text{zh}}$ **[b]**

(b) $\text{S} = \frac{10c^2}{d^2}$ **[d]**

(c) $\text{S} = \frac{10c^3}{d^2}$ **[c]**

(6 marks)

Question 11

Make the letter indicated in brackets the subject of the formula of the following formulae:

(a) $x = qr^4$ **[q]**

(b) $g = u^2 + vl$ **[u]**

(c) $M^2 = frs$ **[M]**

(d) $k = ft^2$ **[t]**

(8 marks)

Question 12

Factorize the following:

(a) $3y^2 + 6y$

(b) $10c^3 + 100c$

(c) $5d^2 + 10d^3 + 15d$

(3 marks)

Question 13

Expand the following:

(a) 3(a + b)

(b) 5(y + z)

(c) 4(t + u +v)

(d) 3(d + a + c)

(e) 4(g + h)

(5 marks)

END OF WORKSHEET