Name: ANSWERS	Date:

Baldivis Secondary College

Year 7 Mathematics
Term 4 2019
Test 4: Algebra

Time allowed: 50 minutes

No calculators allowed

Total Marks: /50 %

Resources Allowed:

- 1 piece of A4 paper notes
- Pens (blue/black preferred), pencils (including coloured), sharpener, correction fluid/tape, eraser, ruler, highlighters

- **Show all your working clearly**. Your working should be in sufficient detail to allow your answers to be checked readily and for marks to be awarded for reasoning. Incorrect answers given without supporting reasoning cannot be allocated any marks. For any question or part question worth more than two marks, valid working or justification is required to receive full marks.

- It is recommended that you **do not use pencil**, except in diagrams.

Question 1 **(4 marks)**

Write mathematical statements (in their simplest form) for the operations described below:

a) 2 more than m — $m+2$ ✓

b) The result of dividing 8 by k — $\frac{8}{k}$ ✓

c) y decreased by 7 — $y-7$ ✓

d) The product of 6 and the result of the sum of 3 and double x — $6(3+2x)$ ✓

or $18+12x$ (simplified)

Question 2 **(3 marks)**

In 4m – 11,

a) State the coefficient? 4 ✓

b) State the pronumeral? m ✓

c) State the constant? −11 ✓

Question 3 **(4 marks)**

Simplify the following by collecting like terms:

a) $2b + 6b + 8$ 8b+8 ✓

b) $4x + 4y - 2x + 8y$ 2x +12y ✓

c) $3 + 6xy + 2yx - 2$ 8xy + 1 ✓

d) $7a + 4a + 2ba - 9a + a^2$ 2a + 2ab + a^2 ✓

Question 4 **(6 marks)**

Simplify:

a) $2b \times 3 \times 4c \times a$ ✓ ✓ 24abc

b) $\frac{6xy}{9yz}$ ✓ $\frac{2x}{3z}$ ✓

c) 7(m + 8) 7m + 56 ✓ ✓

Question 5 **(10 marks)**

Solve the following equations. Write the value of the missing number in the space provided:

a) 6 × 8 = 48 ✓

b) 31 - 4 = 27 ✓

c) 28 ÷ 7 = 4 ✓

d) 36 ÷ 4 = 9 ✓

e) 5 + 8 = 13 ✓

f) 126 + 52 = 178 ✓

g) – 8 × -4 = 32 ✓

h) (5 × 3) – 5 = 10 ✓

i) 38 = 7 × 5 + 3 ✓

j) 75 + (-5) = 70 ✓

Question 6 **(6 marks)**

a) If a = 5 and b = 4, what is the value of 3a + 2b =?

$3a + 2b$

$(3 \times 5) + (2 \times 4)$ ✓

$15 + 8$

$= 23$ ✓

b) If x = 2, what is the value of y = 3x – 7?

$y = 3(2) - 7$ ✓

$= 6 - 7$

$= -1$ ✓

c) If m = 7 and n = 8, what is the value of $\frac{n^2}{4} + m$?

$\frac{8^2}{4} + 7$ ✓

$\frac{64}{4} + 7$

$= 16 + 7$

$= 23$ ✓

Question 7 **(11 marks:1, 1, 2, 2, 2, 3)**

Solve the following equations.

a) $y - 21 = 15$

$y = 15 + 21$

$y = 36$ ✓

b) $\frac{x}{3} = 10$

$x = 10 \times 3$

$x = 30$ ✓

c) $7 + 4n = 23$

$4n = 23 - 7$

$4n = 16$

$n = \frac{16}{4}$ ✓

$n = 4$ ✓

d) $2(m + 1) = 12$

$m + 1 = \frac{12}{2}$

$m + 1 = 6$

$m = 6 - 1$ ✓

$m = 5$ ✓

e) $\frac{c}{2} + 10 = 2$

$\frac{c}{2} = 2 - 10$

$\frac{c}{2} = -8$ ✓

$c = -8 \times 2$

$c = -16$ ✓

f) $\frac{m-6}{7} + 3 = 12$

$\frac{m-6}{7} = 12 - 3$ ✓

$\frac{m-6}{7} = 9$

$m - 6 = 9 \times 7$ ✓

$m - 6 = 63$

$m = 63 + 6$

$m = 69$ ✓

Question 8 **(6 marks: 1, 1, 4)**

Sally is planning a party for her birthday, and needs to hire a venue and organise catering.

A company called Complete Celebrations combines the cost of venue hire and catering for $10 per person. This can be written as c =10n

Alternatively, Sally can hire out a hall with Perfect Parties for $70. That company will provide catering at a cost of $5 per person. This can be written as c = 5n +70

a) Complete the following table for the total cost with Complete Celebrations.

Number of people (n)	12	13	14	15
Total cost ($) (c)	120	130	140	150

b) Complete the following table for the total cost with Perfect Parties.

Number of people (n)	12	13	14	15
Total cost ($) (c)	130	135	140	145

c) i) When do the two companies charge the same amount?

14 people

ii) When is it cheaper for Sally to use Complete Celebrations?

less than 14 people

iii) When is it cheaper for Sally to use Perfect Parties?

more than 14 people

End of Test