

Name: _____

GCSE Unit 2 Practice Assessment

Date:

Time: 70 minutes

Total marks available: 66

Total marks achieved: _____

Questions

Q1.

(a) Factorise fully $6ab + 10ac$

.....
(2)

(b) Expand and simplify $(x - 5)(x + 7)$

.....
(2)

(c) Simplify $\frac{2m^2t^6}{m^4t^2}$

Give your answer in its simplest form.

.....
(2)

(d) Factorise $y^2 - 16$

.....
(1)

(e) Simplify $(h^2)^{-3}$

.....
(1)
(Total for Question is 8 marks)

Q2.

5 female giraffes have a mean weight of x kg.

7 male giraffes have a mean weight of y kg.

Write down an expression, in terms of x and y , for the mean weight of all 12 giraffes.

.....
(Total for Question is 2 marks)

Q3.

(a) Expand and simplify $(p + 9)(p - 4)$

.....
(2)

(b) Solve $\frac{5w - 8}{3} = 4w + 2$

$w =$
(3)

(c) Factorise $x^2 - 49$

.....
(1)

(d) Simplify $(9x^8y^3)^{1/2}$

.....
(2)

(Total for Question is 8 marks)

Q4.

(a) Expand $3(x + 2)$

.....
(2)

(b) Factorise completely $12x^3y - 18xy^2$

.....
(2)

(c) Expand and simplify $(2x - 3)(x + 4)$

.....
(2)

(d) Simplify $5x^4y^3 \times 2x^3y^2$

.....
(2)

(Total for Question is 8 marks)

Q5.

$$f = 3g + 7h$$

(a) Work out the value of f when $g = -5$ and $h = 2$

$$f = \dots\dots\dots$$

(2)

(b) Factorise $3x + 6$

$$\dots\dots\dots$$

(1)

(c) Expand and simplify $5(y - 2) + 2(y - 3)$

$$\dots\dots\dots$$

(2)

(d) Simplify $m^5 \times m^3$

$$\dots\dots\dots$$

(1)

(e) Simplify $\frac{p^6}{p^2}$

$$\dots\dots\dots$$

(1)

(Total for question = 7 marks)

Q6.

Make p the subject of the formula $y = 3p^2 - 4$

.....
(Total for Question is 3 marks)

Q7.

Make t the subject of the formula

$$p = \frac{3 - 2t}{4 + t}$$

.....
(Total for Question is 4 marks)

Q8.

(a) Solve $2x + 3 = x - 4$

$x = \dots\dots\dots$
(2)

(b) Solve $4(x - 5) = 14$

$x = \dots\dots\dots$
(2)

(Total for Question is 4 marks)

Q9.

Dan has some marbles.

Ellie has twice as many marbles as Dan.

Frank has 15 marbles.

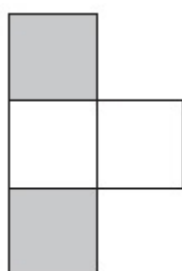
Dan, Ellie and Frank have a total of 63 marbles.

How many marbles does Dan have?

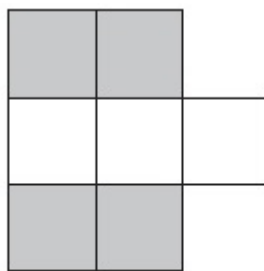
$\dots\dots\dots$
(Total for Question is 3 marks)

Q10.

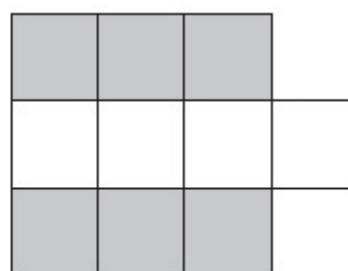
Here are some patterns made from white centimetre squares and grey centimetre squares.



Pattern 1



Pattern 2



Pattern 3

A Pattern has 20 grey squares.

(a) Work out how many white squares there are in this Pattern.

.....
(2)

(b) Find an expression, in terms of n , for the total number of centimetre squares in Pattern n .

.....
(2)

(Total for Question is 4 marks)

Q11.

Here are the first five terms of an arithmetic sequence.

3 5 7 9 11

Write down, in terms of n , an expression for the n th term of the sequence.

.....

(Total for Question is 2 marks)

Q12.

Here are the first five terms of an arithmetic sequence.

2 6 10 14 18

(a) Write down an expression, in terms of n , for the n th term of this sequence.

.....

(2)

(b) Is 86 a term in the sequence?

You must give a reason for your answer.

(1)

(Total for question = 3 marks)

Q13.

Here are the first six terms of a Fibonacci sequence.

1 1 2 3 5 8

The rule to continue a Fibonacci sequence is,

the next term in the sequence is the sum of the two previous terms.

(a) Find the 9th term of this sequence.

.....
(1)

The first three terms of a different Fibonacci sequence are

a b $a + b$

(b) Show that the 6th term of this sequence is $3a + 5b$

(2)

Given that the 3rd term is 7 and the 6th term is 29,

(c) find the value of a and the value of b .

.....
(3)

(Total for question = 6 marks)

Q14.

Here are the first five terms of an arithmetic sequence.

1 5 9 13 17

(a) Write down an expression, in terms of n , for the n th term of this sequence.

.....

(2)

The n th term of a different number sequence is $3n^2 + 7$

(b) Find the 10th term of this sequence.

.....

(2)

(Total for Question is 4 marks)