Algebra Toolkit

Question Paper

Course	Edexcel IGCSE Maths
Section	2. Equations, Formulae & Identities
Topic	Algebra Toolkit
Difficulty	Medium

Time allowed: 50

Score: /35

Percentage: /100

Question 1a

The body mass index, B, for a person of mass m kg and height h metres is given by the formula

$$B = \frac{m}{h^2}$$

Usman has a mass of 50 kg.
He has a height of 1.57 m.

Work out Usman's body mass index.
Give your answer correct to one decimal place.

[2 marks]

Question 1b

Tom's height is 1.80 m.
He wants his body mass index to be 21

(b) Work out the mass that will give Tom a body mass index of 21

[2 marks]

Question 2

$A = 4bc$

$A = 100$
$b = 2$

Work out the value of c.

[2 marks]

Question 3

You can change temperatures from °F to °C by using the formula

$$C = \frac{5(F-32)}{9}$$

F is the temperature in °F.
C is the temperature in °C.

The minimum temperature in an elderly person's home should be 20 °C.

Mrs Smith is an elderly person.
The temperature in Mrs Smith's home is 77 °F.

Decide whether or not the temperature in Mrs Smith's home is lower than the minimum temperature should be.

[3 marks]

Question 4

$x = 0.7$

Work out the value of $\dfrac{(x+1)^2}{2x}$

Write down all the figures on your calculator display.

[2 marks]

Question 5a

$h = 3t^2$

Work out the value of h when $t = 5$

[2 marks]

Question 5b

$h = 3t^2$

Work out the value of t when $h = 108$

[2 marks]

Question 5c

Make a the subject of the formula

$$v = u + at$$

[2 marks]

Question 6

$h = 5t^2 + 2$

(i)
Work out the value of h when $t = -2$

[1]

(ii)
Work out a value of t when $h = 47$

[2]

[3 marks]

Question 7

$w = 5y^2 - y^3$

Work out the value of w when $y = -2$

$w =$ ....

[2 marks]

Question 8

$G = c^2 - 4c$

Find the value of G when $c = -5$

$G =$ ....

[2 marks]

Question 9

Find the value of s when $u = 12$, $a = 10$ and $t = 4$.

$$s = ut + \frac{1}{2}at^2$$

[2 marks]

Question 10

Simplify.

$$2p - q - 3q - 5p$$

[2 marks]

Question 11

$$y = mx + c$$

Find the value of y when $m = -3$, $x = -2$ and $c = -8$.

$y =$ ....

[2 marks]

Question 12

$y = mx + c$.

Find the value of y when $m = -2$, $x = -7$ and $c = -3$.

$y = $ ....

[2 marks]

Question 13

$s = ut + \dfrac{1}{2}at^2$

Find the value of s when $u = 5.2$, $t = 7$ and $a = 1.6$.

$s = $ ....

[2 marks]

Question 14

Complete the statement.

When $5x = 15$, $12x = $ ....

[1 mark]