Algebra 2H Assessment

THE ANSWERS

Higher Level

All questions

Clip	Grade	Title of clip	Question(s)	Marked out of	Score	%
133	4	Midpoint of a Line on a Graph	1 - 2	4	___	__
134	4	Expanding and Simplifying Brackets	3 - 4	15	___	__
135	4	Solving Equations	5 - 6	22	___	__
136	4	Rearranging Simple Formulae	7	5	___	__
137	4	Forming Formulae and Equations.	8 - 10	14	___	__
138	4	Inequalities on a Number Line	11	7	___	__
139	4	Solving Linear Inequalities	12	7	___	__
140	4	Simultaneous Equations Graphically	13	2	___	__
141	4	Fibonacci Sequences	14 - 15	4	___	__

Out of 80 TOTAL SCORE _____

Final Percentage [ ] %

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1) Find the coordinates of M, the midpoint of A and B where A has coordinates (-2, 6) and B has coordinates (4, 9).

The coordinates of M are: (1, 7.5) **2**

2) S has coordinates (1, 3) and is the midpoint of R and T where the coordinates of R are (4, -7). Find the coordinates of T.

The coordinates of T are: (-2, 13) **2**

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3) Expand and simplify:

a) $2(5x + 4) - 3(x + 2)$

$7x + 2$ **2**

b) $3(2x - 1) + 5(3x + 3)$

$21x + 12$ **2**

c) $4(x + 3y) - (x - y)$

$3x + 13y$ **2**

4) Expand and simplify:

a) $(x - 5)(x + 7)$

$x^2 + 2x - 35$ **3**

b) $(3x + 1)(2x - 3)$

$6x^2 - 7x - 3$ **3**

c) $(2x - 3)^2$

$4x^2 - 12x + 9$ **3**

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5) Solve the following equations.

a) $x - 5 = 16$ $x =$ 21 **2**

b) $\frac{3n}{4} = 6$ $n =$ 8 **2**

c) $2y + 9 = 19$ $y =$ 5 **2**

d) $3(x + 4) = 33$ $x =$ 7 **3**

e) $5y - 10 = 2y + 8$ $y =$ 6 **3**

f) $2(a - 2) = 3(a - 4)$ $a =$ 8 **3**

6) Solve the following equations.

a) $\frac{5x - 4}{3} = 5x - 3$

$x =$ 0.5 **3**

b) $\frac{3x + 1}{2} = \frac{4x + 6}{5}$

$x =$ 1 **4**

7) a) Make f the subject of this formula: $y = f - 2e$

$f =$ $y + 2e$ **1**

b) Make r the subject of this formula: $t^2 = 3r + 7a$

$r =$ $\frac{t^2 - 7a}{3}$ **2**

c) Make h the subject of this formula: $V = \pi r^2 h$

$h =$ $\frac{V}{\pi r^2}$ **2**

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8) Jelly Beans are sold in bags and tins.

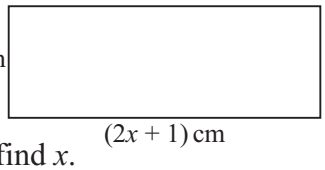
There are 25 Jelly Beans in a bag and 60 Jelly Beans in a tin.

Tim buys B bags and T tins of Jelly Beans.

Write down a formula for J, the total number of Jelly Beans bought by Tim, in terms of B and T.

$J = 25B + 60T$ **3**

9) a) Form an expression in terms of x for the area of this rectangle:



$5(2x + 1)$ or $10x + 5$ **2**

b) If the area A of the rectangle is 40 cm^2, form an equation and solve it to find x.

$x =$ 3.5 **3**

c) Work out the perimeter P of the rectangle.

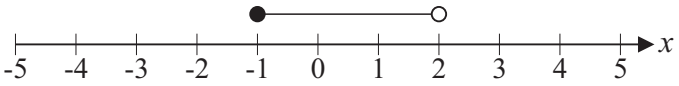
$P =$ 26 cm **2**

10) The angles of a triangle are $3x$, $x + 50$ and $x + 30$.

Work out the value of the largest angle.

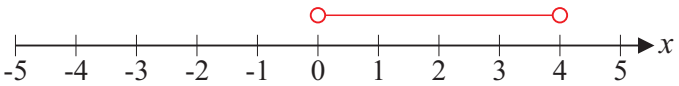
70 ° **4**

11) a) Circle the inequality shown by the diagram.



$-1 < x < 2$ $-1 \leqslant x < 2$ $-1 < x \leqslant 2$ $-1 \leqslant x \leqslant 2$ **2**

b) Represent the inequality $0 < x < 4$ on the number line below.



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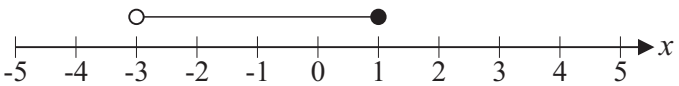
c) Write down all the integer values satisfied by this diagram.



$x =$ -2, -1, 0, 1 **3**

12) Solve the following inequalities.

a) $3x - 5 < 7$ $x < 4$ **2**

b) $\frac{n}{4} + 1 \geqslant 9$ $n \geqslant 32$ **2**

c) $4x - 6 < x + 3$ $x < 3$ **3**

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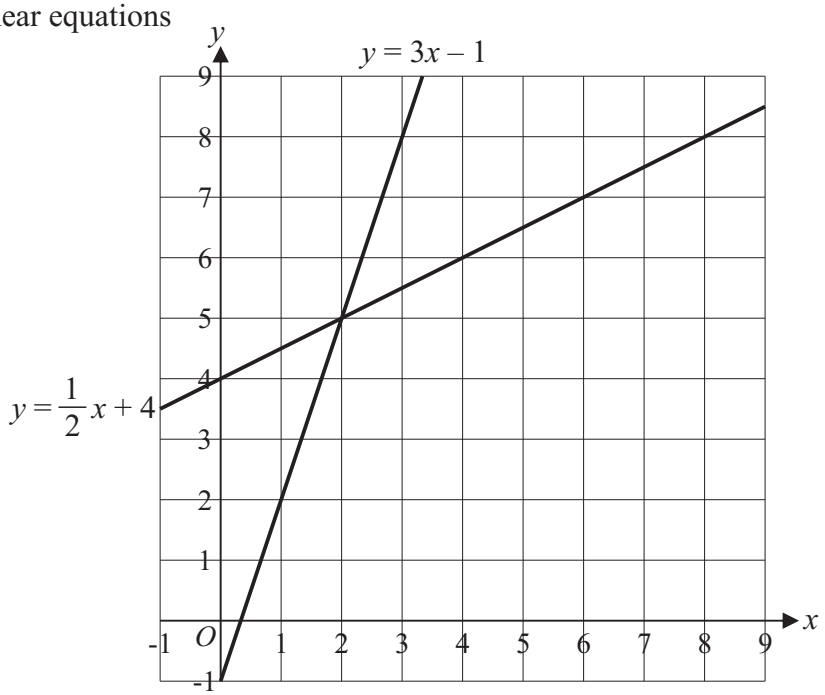
13) Use the graphs to solve the simultaneous linear equations

$y = 3x - 1$ and $y = \frac{1}{2}x + 4$



$x =$ 2 and $y =$ 5

1 **1**

14) Write down the next two terms of the Fibonacci sequence below.

1, 1, 2, 3, 5, 8, 13

1 **1**

15) If the first three Fibonacci numbers are defined as $x_1 = 1$, $x_2 = 1$ and $x_3 = 2$, what is the value of n for which $x_n + x_{n+1} = 34$?

$n =$ 7

2

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