

Algebra 2F Assessment

THE ANSWERS

Foundation 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 %

- 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

- 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

- 5) Solve the following equations.

a) $x - 5 = 16$ $x = \underline{21}$ 2

d) $3(x + 4) = 33$ $x = \underline{7}$ 3

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

e) $5y - 10 = 2y + 8$ $y = \underline{6}$ 3

c) $2y + 9 = 19$ $y = \underline{5}$ 2

f) $2(a - 2) = 3(a - 4)$ $a = \underline{8}$ 3

- 6) Solve the following equations.

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

$x = \underline{0.5}$ 3

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

$x = \underline{1}$ 4

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

$f = \underline{y + 2e}$ 1

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

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

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

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

8) Jelly Beans are sold in bags and tins.

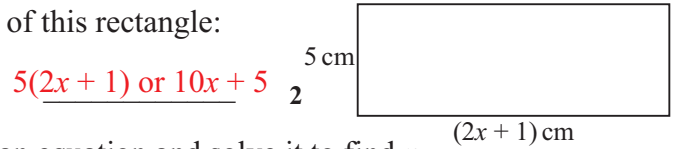
There are 25 Jelly Beans in a bag and 60 Jelly Beans in a tin.

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:



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.

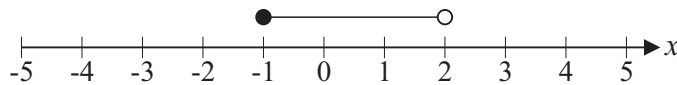
$P = 26 \text{ cm}$ 2

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

Work out the value of the largest angle.

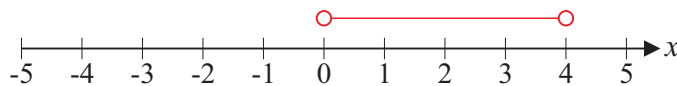
70° 4

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



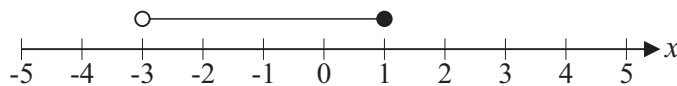
- $-1 < x < 2$ $-1 \leq x < 2$ $-1 < x \leq 2$ $-1 \leq x \leq 2$ 2

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



2

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) $\frac{n}{4} + 1 \geq 9$

$n \geq 32$ 2

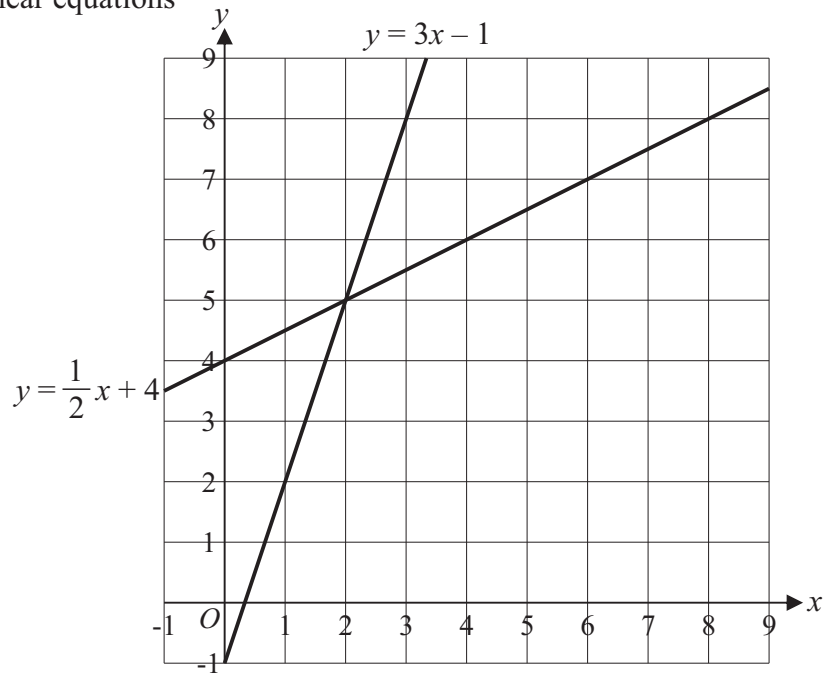
c) $4x - 6 < x + 3$

$x < 3$ 3

13) Use the graphs to solve the simultaneous linear equations

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

$$x = \frac{2}{1} \quad \text{and} \quad y = \frac{5}{1}$$



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

$$1, 1, 2, 3, 5, \frac{8}{1}, \frac{13}{1}$$

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 $x_n + x_{n+1} = 34$?

$$n = \frac{7}{2}$$