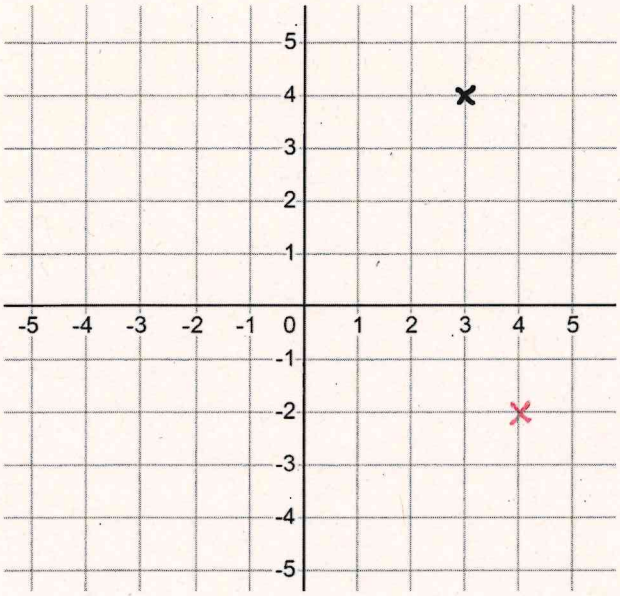
1



(a) Write down the coordinates of the point marked on the axes above.

Answer: _(3 , 4)__

(1 mark)

(b) Plot point (4, -2) on the axes.

(1 mark)

2

(a) Write 5,082,407 in words.

Answer: Five million, eighty two thousand,

four hundred and seven

(1 mark)

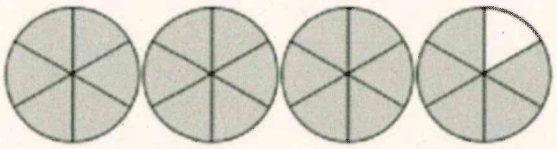
(b) What is the **place** value of the 8 in 4.0869?

Answer: hundredths

$\frac{1}{100}$ 0.01

(1 mark)

3



Write the number represented above as

(a) a mixed number:

Answer: $3\frac{5}{6}$

(1 mark)

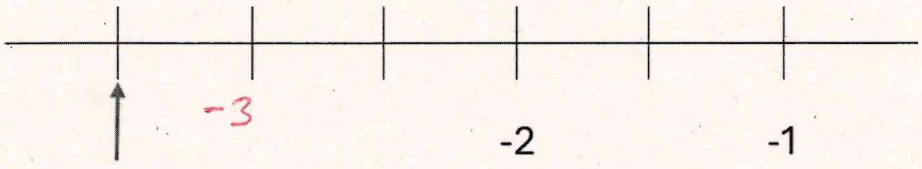
(b) an improper fraction:

Answer: $\frac{23}{6}$

(1 mark)

4 Label the numbers marked with the arrows:

(a)



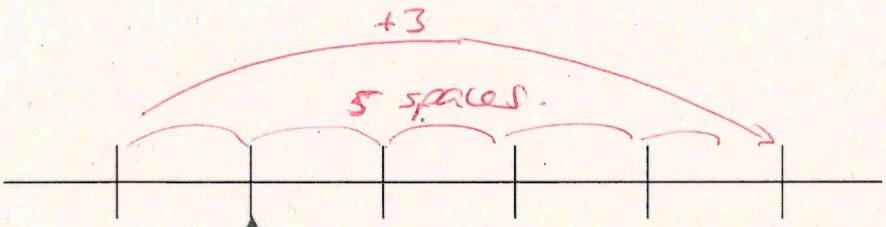
-3.5

A1

M1 – suitable method seen eg $\frac{1}{2}$

(2 marks)

(b)



7 3/5 oe

M1 10 − 7 (or 3)

M1 "their 3" ÷ 5

A1 7 3/5 (= 7.6 = 38/5)

(3 marks)

5

(a) Work out 378 x 46

	300	70	8
40	12 000	2800	320
6	1800	420	48

M1 good attempt
A1 17388

$$\begin{array}{r} 378 \\ \times\ 46 \\ \hline 2268 \quad (\times 6) \\ 15120 \quad (\times 40) \\ \hline 17388 \end{array}$$

Answer: 17388

(2 marks)

(b) Given that 32 x 45 = 1440, find 3.2 x 4.5

Answer: 14.4

(1 mark)

6 Evaluate:

(a) $\frac{5}{14} + \frac{3}{7}$

$= \frac{5}{14} + \frac{6}{14} = \frac{11}{14}$

(M1) (A1)

(matching denom)

Answer: $\frac{11}{14}$

(2 marks)

(b) $2\frac{5}{6} + 3\frac{7}{10}$ (Give answer as simplified mixed number)

$= 2\frac{25}{30} + 3\frac{21}{30}$ M1 (matching denom)

$= 5\frac{46}{30}$ M1 - correctly combined, and simplified

$= 6\frac{16}{30} = 6\frac{8}{15}$ A1

Answer: $6\frac{8}{15}$

(3 marks)

7 Here is a linear sequence with the first term missing: ? , 5, 11, 17, 23, ...

(a) Find the **next** term in the sequence above

+6

Answer: 29

(1 mark)

(b) Find the missing first term in the sequence above

Answer: −1

(1 mark)

(c) A different linear sequence has a term-to-term rule of 'add 3' and the fifth term is 8. Find the first term.

−3

−4 −1 2 5 8

1st 5th

M1 subtract 3 more than once

A1 −4

Answer: −4

(2 marks)

8 Solve the equations:

(a) $12 = x - 7$

$19 = x$

Answer: 19

(1 mark)

(b) $x + 1.6 = 0.3$

$x = -1.3$

Answer: −1.3

(1 mark)

(c) $4x + 5 = 19$

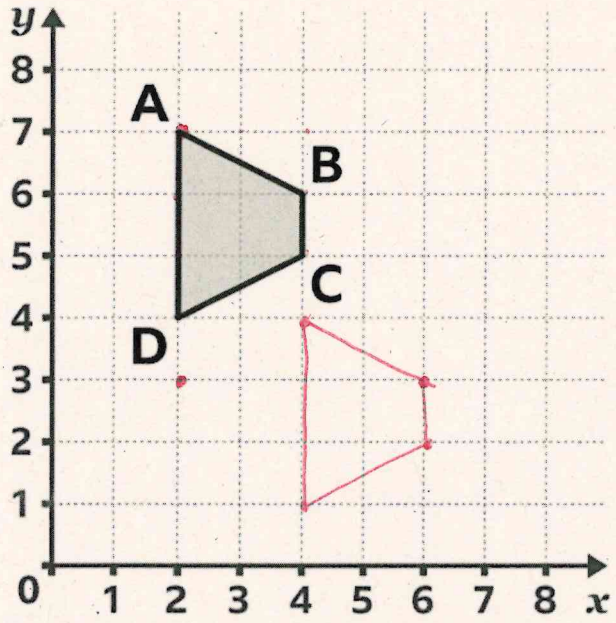
$4x = 14$ (M1)

$x = \frac{14}{4}$ $\left(= \frac{7}{2} = 3.5\right)$

Answer: $\frac{7}{2}$ (oe.)

(2 marks)

9



$\begin{pmatrix} 2 \\ -3 \end{pmatrix}$

(a) Translate trapezium ABCD using the column vector shown above

right

M1 either 2 or 3 down correct

A1 fully correct

(2 marks)

(b) Write down the column vector that would translate vertex A to (2,3)

Answer: $\begin{pmatrix} 0 \\ -4 \end{pmatrix}$ B1 B1

(2 marks)

10

(a) Write 21 as a fraction of 31

Answer: $\frac{21}{31}$

(1 mark)

(b) Find four fifths of twenty-one

$\frac{4}{5} \times 21 = \frac{84}{5} \left(= 16\frac{4}{5} = 16.8 \right)$

$\frac{1}{5}$	21		M1 either step correct
$\frac{1}{5}$	$\frac{21}{5}$	÷5	
$\frac{4}{5}$	$\frac{84}{5}$	×4	

A1

Answer: $\frac{84}{5}$ oe.

(2 marks)

11 Calculate the following:

(a) $15 \div 0.5$

$\frac{15}{0.5} = \frac{150}{5} = 30$

M1 M1 or other correct method

Answer: 30

(2 marks)

(b) $43.21 - 1.793$

$$\begin{array}{r} {}^{2}{}^{1}{}_{1}{}^{1}{}_{0} \\ 43.2\,1\,0 \\ 1.7\,9\,3 \\ \hline 41.417 \end{array}$$

M1 - allow 1 error

Answer: 41.417

(2 marks)

12

(a) Write down 2 pairs of coordinates that will be on the line $y = 2x$

eg // x2

Answer: (1, 2) (3, 6)

(2 marks)

(b) Find the y coordinate for the point on line $y = 3x - 4$ that has $x = 10$

$y = 3 \times 10 - 4$ M1

$= 30 - 4$

$= 26$ A1

Answer: 26

(2 marks)

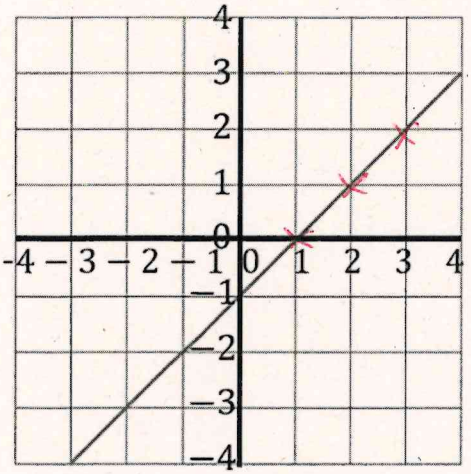
(c) Does the point (2, 7) lie on the line $x + y = 10$? You must give a reason for your answer.

$2 + 7 = 9$ so no

Yes/No Reason: $2 + 7 = 9$ not 10 oe.

(1 mark)

(d)



Find the equation of the line above

eg (1, 0) (2, 1) (3, 2)

M1 – at least 2 pairs correct coords

$y = x - 1$

[$x = y + 1$ ~~wrong~~ $x - y = 1$]

Answer: $y = x - 1$ oe.

(2 marks)

13 Fully factorise the following expressions:

(a) $8a + 12$ $= 4(2a + 3)$

B1 – 1 term expands correctly

A1 – fully correct

Answer: $4(2a + 3)$

(2 marks)

(b) $5a^2b + 10a^2bc - 5a^2b^2$

$= 5a^2b(1 + 2c - b^*)$

Answer: $5a^2b(1 + 2c - b)$

(3 marks)

M1 – good attempt, at least 5a or 5b at front

M1 – correct factorisation but not fully factorised

or $5a^2b$ at front, 1 error in bracket

A1 – fully correct

14

(a) Jack's dog eats 11 packs of dog food in 2 weeks. How many packs will she eat in 7 weeks?

weeks	packs	
2	11	÷2
1	5.5	
7	38.5	×7

M1

either step calculated correctly or both clearly attempted.

7×5.5

$= 35 + 3.5$

$= 38.5$

Answer: 38.5 (A1)

(2 marks)

(b) 4.5kg of oranges and 3kg of apples cost a total of £3.87.
2.5kg of oranges cost £1.40.
Work out the cost of 1kg of apples.

oranges

2.5 kg	£1.40
÷5 → 0.5 kg	£0.28
×9 → 4.5 kg	£2.52

M1 or other middle step correct.

A1

apples

3 kg	£1.35
÷3 → 1 kg	£0.45

M1 their £1.35 ÷3

$$3 \overline{)1.35} = 0.45$$

$$5 \overline{)1.40} = 0.28$$

$9 \times 28 = 180 + 72$

$= 252$

$9 \times 0.28 = 2.52$

$3.87 - 2.52 = £1.35$ M1 (their 2.52)

A1

Answer: £0.45 oe.

(5 marks)

15 Gregory received £2400. He gave $\frac{1}{3}$ of it to his favourite charity and spent $\frac{1}{5}$ of it on a new violin.

(a) What fraction of his money is left?

$1 - \frac{1}{3} - \frac{1}{5}$ M1

$= \frac{15}{15} - \frac{5}{15} - \frac{3}{15}$ M1 (match denom)

$= \frac{7}{15}$ A1

Answer: $\frac{7}{15}$

(3 marks)

(b) He now spends $\frac{2}{5}$ of his remaining money on a bike. How much did the bike cost?

remaining money $\frac{7}{15}$ of 2400 (B1) attempt this

$\frac{2400}{15} \overset{\div 3}{=} \frac{800}{5} = 20 \times 8 = 160$ M1

$7 \times 160 = 700 + 420 = 1120$ (A1)

(M1) "$\times 2/5$" their 1120

$\frac{2}{5}$ of 1120

$= \frac{2240}{5}$

$5\overline{)2^{2}2^{2}40}$ $= 448$ (A1)

Answer: £ 448

(4 marks)

END OF TEST