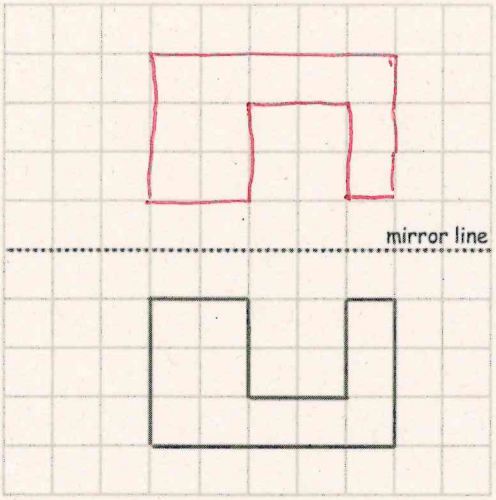
1

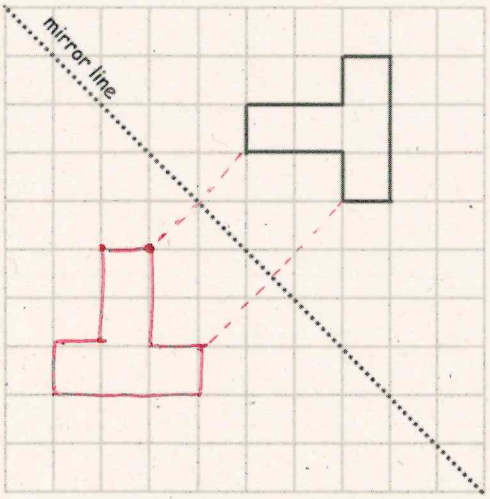
(a) Reflect the shape in the mirror line:



B1 reasonable attempt
A1 fully correct

(2 marks)

(b) Reflect the shape in the mirror line:



M1 at least 2 points equidistant + ⊥ perpendicular

A1 fully correct

(2 marks)

2 Work out:

(a) $6 + 3 \times 2$

$= 6 + 6 \quad = 12$
M1 A1

Answer: 12
(2 marks)

(b) $10 - (3^2 + 4)$

$= 10 - (9 + 4)$ M1
$= 10 - 13$ M1
$= -3$ A1

Answer: -3
(3 marks)

(c) $\dfrac{3 - 9}{-2 \times 3}$

$= \dfrac{-6}{-6}$ B1 B1 $= 1$ A1

Answer: 1
(3 marks)

3 Write the following numbers in ascending order: 0.407, 0.47, 0.405, 0.4, 0.504

(−1 1 error)

Answer: 0.4, 0.405, 0.407, 0.47, 0.504
(2 marks)

4 Mya is **m** years old Narin is **n** years old

(a) Write an expression for the sum of Mya and Narin's ages

Answer: $m+n$ oe
(1 mark)

(b) Jack is twice as old as Mya, write an expression for his age

Answer: $2m$ oe.
(1 mark)

(c) Sarah is 3 years older than Jack, write an expression for her age

Answer: $2m+1$ A1 (ft)
(1 mark)

5 Evaluate:

(a) 4.36×1000

Answer: 4360

(1 mark)

(b) $0.072 \div 10$

Answer: 0.0072

(1 mark)

(c) 56×0.001

Answer: 0.056

(1 mark)

6 Simplify the following:

(a) $6x + 9x - x$

Answer: 14x

(1 mark)

(b) $4a + 7 - 2a + 5$

B1 B1

Answer: 2a + 12

(2 marks)

(c) $3ab - 2a^2 - 4a^2 + 4ab$

B1 B1

Answer: $7ab - 6a^2$

(2 marks)

7 Calculate:

(a) $-7 + 12$

Answer: 5

(1 mark)

(b) $6 - 3 - 5 - - 2$

M1 correct middle step

eg $6 - 3 - 5 + 2$

Answer: 0

(2 marks)

(c) -3×5

Answer: -15

(1 mark)

(d) $-20 \div -4$

Answer: 5

(1 mark)

8 Evaluate and simplify:

(a) $\frac{3}{4} \times \frac{2}{5}$ ^{1} ^{2} M1 $= \frac{3}{10}$ A1 or $= \frac{6}{20}$ M1 $= \frac{3}{10}$ A1

Answer: $\frac{3}{10}$

(2 marks)

(b) $2\frac{1}{3} \times \frac{4}{7}$

M1 for simplifying

$= \frac{7}{3} \times \frac{4}{7} = \frac{4}{3} = 1\frac{1}{3}$

M1 (improper) A1

Answer: $1\frac{1}{3}$ $(= \frac{4}{3})$

(3 marks)

9 Given that a = 0.3, b = 5, c = −2 evaluate:

(a) 3b + 4 $= 3 \times 5 + 4$ M1

$= 15 + 4$

$= 19$ A1

Answer: 19

(2 marks)

(b) 3(a + b)

$= 3\ (0.3 + 5)$ M1

$= 3 \times 5.3$

$= 15.9$ A1

Answer: 15.9

(2 marks)

(c) abc

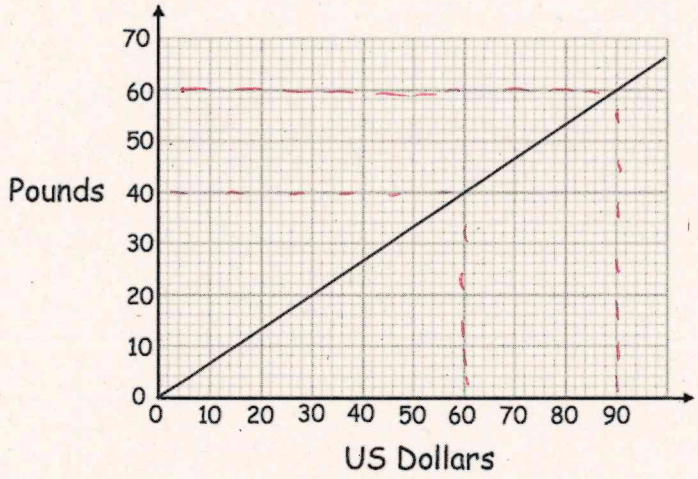
$= 0.3 \times 5 \times (-2)$ M1

$= -10 \times 0.3 = -3$ A1

Answer: −3

(2 marks)

10



Use the graph above to convert:

(a) 90 US Dollars into Pounds

Answer: £ 60

(1 mark)

(b) 80 Pounds into US Dollars

eg1

Pounds	Dollars
40	60
×2 ↳ 80	120

} M1

A1

Answer: $ 120

(2 marks)

11

(a) Write $\frac{3}{8}$ as a decimal

M1 suitable method

eg 0.375 with $8\overline{)3.^{3}0^{6}0^{4}0}$

eg $\frac{1}{4} = 0.25$ ÷2 $\frac{1}{8} = 0.125$ ×3 $\frac{3}{8} = 0.375$

Answer: 0.375 A1

(2 marks)

(b) Write 35% as fraction in its simplest form

$\frac{35}{100} = \frac{7}{20}$

M1 A1

Answer: $\frac{7}{20}$

(2 marks)

(c) Write 0.135 as a percentage

Answer: 13.5 %

(1 mark)

12 Reduce £340 by 15%

eg

100%	340
10%	34 M1
5%	17
15%	51

$^{2}B^{1}3^{1}4^{1}0$ − 51 } M1 their 51

289

OR eg

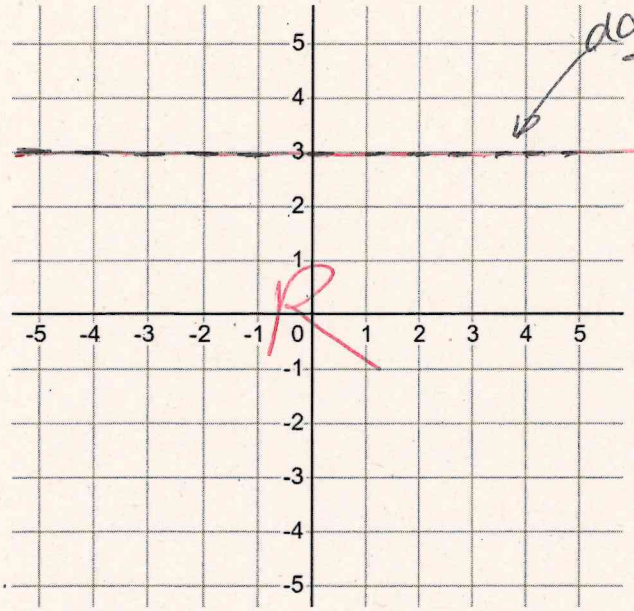
100%	340
10%	34 M1
5%	17 ×8
+ 80%	272 → 240 32
→ 85%	289

M1

Answer: £289 A1

(3 marks)

13 Label the region $y < 3$ with the letter R



M1 (y=3) (allow solid)

A1 fully C

(2 marks)

14 Expand and simplify these expressions:

(a) $3(x + 4)$

B1 B1

Answer: $3x + 12$

(2 marks)

(b) $2(3y - 5) + 4y$

$= 6y - 10 + 4y$ M1

$= 10y - 10$ A1 ft

Answer: $10y - 10$

(2 marks)

(c) $y(4y + 3) - y(2y - 5)$

$= 4y^2 + 3y - 2y^2 + 5y$ M1 3 terms correct
A1 all correct

$= 2y^2 + 8y$ M1 simplified correctly (dep 1st M1)
A1 both correct

Answer:

(4 marks)

15

(a) The nth term rule for a sequence is 4n – 3
Find the first three terms

M1

$4\times1-3=4-3=1$

$4\times2-3=8-3=5$

$4\times3-3=12-3=9$

A1

Answer: 1, 5, 9

(2 marks)

(b) Find the nth term for this sequence: 5, 8, 11, 14, 17,...

1 2 3

+3 +3

$3\times1=3$ so $+2$

$3n+2$

↑

B1

A1

Answer: 3n+2

(2 marks)

(c) Find the 35th term for this sequence: 99, 97.5, 96, 94.5, 93,...

−1.5 −1.5

nth term = $-1.5n + (99+1.5)$

$= -1.5n + 100.5$ M1

35th term = $-1.5\times35+100.5$ M1 good attempt their nth term

$= -52.5 + 100.5$

$= 48$

$35\times15 = 350+175$

$= 525$

35×5

175

$\div2$

So $35\times-1.5 = -52.5$

A1

Answer: 48

(3 marks)

100.5

-52.5

48.0

16 The picture shows a 2 pence coin.
Each 2 pence coin is 0.185cm thick.
Stephen builds a tower of 250 2p coins

: 0.185cm

(a) How tall is the tower?

$250 \times 0.185 = 46.25$

185
x 25
925 (x5)
3700 (x20)
4625
1

M1

A1

Answer: 46.25 cm
(2 marks)

(b) Jane has a tower of 5 pence coins.
Her tower is 26.52cm taller than Stephen's.
5 pence coins are 0.19cm thick.
How many 5 pence coins does Jane have in her tower?

46.25
26.52
72.77
1

+ M1 their 46.25

$\frac{72.77}{0.19} = \frac{7277}{19}$

383
19) 72 15 77 5

M1
good attempt ÷ 19

1. 19
2. 38
3. 57
4. 76
8. 152

A1

Answer: 383
(3 marks)

END OF TEST