Mark schemes

Q1.

(a)   20

Allow P = 20

B1

(b)   53 − 11 or 42
or 33 × 3 or 99
or 11 × 2
or 33 − 11
or 22

M1

their 42 ÷ 3 or 14
or their 99 − 53 − their 22
or (their 22 × 3) − their 42
or 24

oe e.g. build up - allow one error

M1dep

33 − 11 − their 14
or their 24 ÷ 3

Dep on M1M1

M1dep

8

A1

Additional Guidance

3 × 14 + 11 = 53

M2

[5]

Q2.

$\frac{1}{2}$ × 112 × 6 or 726 or 60.5

oe

M1

363

A1

[2]

Q3.

Alternative method 1

16 or −9 or 7

M1

28

A1

Alternative method 2

$8x + 12y$
or 64 or −36

M1

28

A1

[2]

Q4.

$4x = 5 + 17$ or $4x = 22$

M1

5.5

oe
SC1 3

A1

[2]

Q5.

$x = 3$

B1

[1]

Q6.

(a)   17

B1

(b)   9

B1

(c)   −2

B1

[3]

Q7.

(a) $(5x + 3 =) 3x + 6$

B1

$5x −$ their $3x =$ their $6 − 3$ or $2x = 3$

oe

M1

1.5

oe
ft for linear equation if B0 scored

A1 ft

(b) $2x + 32$ or $4x − 20$

Accept ax + ab for M1

M1

AQA GCSE Maths - Equations (F)

$6x + 12$ or $6(x + 2)$

A1

$a = 6$ and $b = 2$

ft from their 6x + 12 if M1 earned
SC2 a = 6 and b = 12
SC1 a = 6

A1 ft

[6]

Q8.

$$x = \frac{1}{4}$$

B1

[1]

Q9.

$4x = 14 + 3$ or $4x = 17$
or $(14 + 3) \div 4$ or $17 \div 4$
or $x - \frac{3}{4} = \frac{14}{4}$

M1

4.25 or $\frac{17}{4}$ or $4\frac{1}{4}$

A1

Additional Guidance

Embedded answer of 4.25 with 4.25 not selected on answer line
e.g. 4 × 4.25 − 3 = 14 with no answer given or answer of 14 or 17

M1A0

14 + 3 and answer 4.25

M1A1

14 + 3 only

M0A0

Trial and improvement with answer 4.25

M1A1

Trial and improvement with no answer or answer other than 4.25

M0A0

4.25 or $\frac{17}{4}$ or $4\frac{1}{4}$ seen and then answer 4 given

M1A1

Answer of ×4.25

M1A0

17 ÷ 4 (and no further)

M1A0

[2]

AQA GCSE Maths - Equations (F)

Q10.

(a) $(x - y)(x + y)$

B1

(b) $\frac{2x}{5} = 13 - 1$ or $\frac{2x}{5} = 12$

(13 − 1) × 5 scores M1

M1

$2x =$ their $12 × 5$
or
$2x =$ their $65 -$ their 5 or $2x = 60$

oe
(13 − 1) × 5 ÷ 2 scores M1M1

M1

30

A1

Additional Guidance

Embedded answer

eg $\frac{2 \times 30}{5} + 1 = 13$

M1M1A0

eg $\frac{60}{5} + 1 = 13$

M1M0A0

[4]

Q11.

(a) 6, 15, 24, 60 in any order

B1 for 6, 15, 24, 60 with no more than one additional value
or three correct values with no more than one incorrect value

B2

Additional Guidance

Ignore repeated values for B2 and B1

6, 10, 15, 24, 60

B1

6, 10, 15, 24

B1

6, 10, 15, 24, 36

B0

2 × 3, 5 × 3, 2 × 12, 5 × 12

B0

$6xy, 15xy, 24xy, 60xy$

B0

AQA GCSE Maths - Equations (F)

(b) $\dfrac{2-12}{2}$

or one correctly evaluated trial with correct substitutions for
$x = 2$ or 5 and $y = 3$ or 12

or two correct values from $-\dfrac{10}{2}, \ -\dfrac{1}{2}, \ -\dfrac{7}{5}, \ \dfrac{2}{5}$ oe

or two correct values from $-5, -0.5, -1.4, 0.4$ oe

$\dfrac{2-3}{2} = -\dfrac{1}{2}$ oe

or $\dfrac{5-12}{5} = -\dfrac{7}{5}$ oe

or $\dfrac{5-3}{5} = \dfrac{2}{5}$ oe

M1

$-\dfrac{10}{2}$ or -5

A1

Additional Guidance

Two separate correct values can be in either fraction or decimal form

$2 - 12 \div 2 = -5$ (recovered)

M1A1

$2 - 12 \div 2$

M0A0

An example of an incorrect substitution with different values of x

eg $\dfrac{5-12}{2} = -\dfrac{7}{2}$

[4]

Q12.

$5 \times 7 \ (+) \ 9 \times -2$
or 35 or 18

M1

17

A1

[2]

Q13.

$x - 3 = \dfrac{x}{2}$

B1

[1]

Q14.

36

B1

[1]

Q15.

Alternative method 1

$12x - 8$

May be seen in a grid

M1

their $12x - 2x = -5 +$ their 8
or $10x = 3$
or their $-8 + 5 = 2x -$ their 12
or $-3 = -10x$

Collecting two terms in x and two constant terms correctly
oe e.g. $10x - 3 = 0$

M1

0.3 or $\dfrac{3}{10}$

ft M1M0 or M0M1 with exactly one error

A1ft

Alternative method 2

$\dfrac{x}{2} - \dfrac{5}{4}$

M1

$3x -$ their $\dfrac{x}{2} =$ their $-\dfrac{5}{4} + 2$

or $\dfrac{5}{2}x = \dfrac{3}{4}$

or $-2 +$ their $\dfrac{5}{4} =$ their $\dfrac{x}{2} - 3x$

or $-\dfrac{3}{4} = -\dfrac{5}{2}x$

Collecting two terms in x and two constant terms correctly
oe e.g. $\dfrac{5}{2}x - \dfrac{3}{4} = 0$

M1

0.3 or $\dfrac{3}{10}$

ft M1M0 or M0M1 with exactly one error

A1ft

Additional Guidance

$12x - 2 = 2x - 5$

M0

$10x = -3$

M1

$x = -0.3$

A1ft

$12x - 8 = 2x - 5$

M1

$10x = -5$

M0

$x = \dfrac{-5}{10}$

A1ft

$12x - 8 = 2x - 5$

M1

$14x = 3$

M0

$x = \dfrac{3}{14}$

A1ft

$12x - 8 = 2x - 5$

M1

$14x = -13$

M0

$x = -\dfrac{13}{14}$ (two errors)

A0ft

$12x - 8 = 8x - 20$

M1M0A0

Any ft answer must be exact or rounded or truncated to at least 2 dp

The last two marks can be implied without the collection of terms seen e.g.
$12x - 6 = 2x - 5$ and answer 0.1

M0M1A1ft

Collecting terms before the bracket has been expanded

Zero

[3]