Fully-Worked Solutions

PRACTICE 6

Section A

1 Answer: B

2 $2(2x + 3 + x) = 41$
$2(3x + 3) = 41$
$6x + 6 = 41$
Answer: D

3 $3(2 - p) = 12$
$2 - p = \dfrac{12}{3}$
$-p = 4 - 2$
$p = -2$
Answer: A

4 $\dfrac{t + 4}{8 - t} = 2$
$t + 4 = 2(8 - t)$
$t + 4 = 16 - 2t$
$t + 2t = 16 - 4$
$3t = 12$
$t = \dfrac{12}{3}$
$t = 4$
Answer: D

5 Answer: D

6 Answer: C

7 $3x + 4y = 20$
$3x + 4(2) = 20$
$3x + 8 = 20$
$3x = 20 - 8$
$x = \dfrac{12}{3}$
$x = 4$
Answer: C

8 A: $2(-2) - (-11) = -4 + 11 = 7$
B: $2(2) - (-3) = 4 + 3 = 7$
C: $2(4) - (-1) = 8 + 1 = 9$
D: $2(5) - 3 = 10 - 3 = 7$
Answer: C

9 A: $5(2) + 3(4) = 10 + 12$
$= 22$
Answer: A

10 $4x - 3y = 13$ ... ①
$5x + y = 21$ ....②
From ②, $y = 21 - 5x$
Substitute ② into ①,
$4x - 3(21 - 5x) = 13$
$4x - 63 + 15x = 13$
$19x = 13 + 63$
$19x = 76$
$x = 4$
Answer: C

11 $x + y = 20$ ...①
$y = 2x + 5$ ...②
Substitute ② into ①,
$x + 2x + 5 = 20$
$3x = 15$
$x = 5$
Substitute $x = 5$ into ②,
$y = 2(5) + 5$
$y = 15$
Answer: C

Section B

1 (a) $-8 - 3 = -11$ [✗] (b) $3x + x = 4x$ [✗]
(c) $2p + 3p = 5p$ [✓] (d) $-2x - 3x = -5x$ [✓]

2

$2x^2 + 3 = 5$	$6y - 2x = 5$	$\dfrac{3}{x} = 4x + 2$
$5p + 2 = 3p$	$m = n$	$3ab + 3a = 5$
$\dfrac{2}{x + 3} = 3y$	$4u = \dfrac{1}{v}$	$\dfrac{3x + 2}{3 - x} = 4$

3 (a) $5x - 3 = 9 + 2x$
$3x = 12$
$x = 4$
(b) $20 - x = 4 - 5x$
$4x = -16$
$x = -4$
(c) $4x + 4 = x - 8$
$3x = -12$
$x = -4$
(d) $3x + 4 = 4x$
$x = 4$

4 $4x - 5y = 6$ ...①
$4x + y = 18$ ...②
② − ①, $6y = 12$
$y = 2$
$4x = 16$
$x = 4$

Section C

1 (a) Length $= x$ cm
Width $= (2x - 9)$ cm
$2x + 2(2x - 9) = 30$
$2x + 4x - 18 = 30$

$$6x - 18 = 30$$
$$6x = 48$$
$$x = 8$$
∴ Length = 8 cm
Width = 2(8) – 9 = 7 cm

(b) (i)
$$5p = 18 + 2p$$
$$5p - 2p = 18$$
$$3p = 18$$
$$p = 6$$

(ii)
$$\frac{t}{5} + 7 = \frac{2}{5} - 2t$$
$$\frac{t}{5} \times 5 + 7 \times 5 = \frac{2}{5} \times 5 - 2t \times 5$$
$$t + 35 = 2 - 10t$$
$$11t = -33$$
$$t = -3$$

(c)
$$3x + x + x - 5 = 65$$
$$5x = 65 + 5$$
$$5x = 70$$
$$x = \frac{70}{5}$$
$$x = 14$$
Bazri' age is 14 years old.

2 (a) (i)
$$3q - 4(-3) = 18$$
$$3q = 6$$
$$q = 2$$

(ii)
$$2(-3) = 4 + 5q$$
$$-10 = 5q$$
$$q = -2$$

(iii)
$$\frac{3(-3) + 5}{2 - q} = 4$$
$$\frac{-9 + 5}{2 - q} = 4$$
$$-4 = 4(2 - q)$$
$$-1 = 2 - q$$
$$-3 = -q$$
$$q = 3$$

(b)
$$2(2x + 5) + 4x = 100 - 26$$
$$4x + 10 + 4x = 74$$
$$8x = 64$$
$$x = 8$$
The price of an exercise book is RM8.

(c)
$$4x - 3y = 21 \quad ...①$$
$$3x + 3y = 42 \quad ...②$$
$$① + ②, 7x = 63$$
$$x = 9$$
Substitute $x = 9$ into ②,
$$3(9) + 3y = 42$$
$$3y = 15$$
$$y = 5$$

3 (a)
$$6x + 5y = 22.5 \qquad ...①$$
$$3x + 2y = 10.5 \qquad ...②$$
$$② \times 2, 6x + 4y = 21 \quad ...③$$
$$① - ③, y = 1.5$$
Substitute $y = 1.5$ into ②,
$$3x + 2(1.5) = 10.5$$
$$3x = 7.5$$
$$x = 2.5$$
The prices of a pen and an eraser are RM2.50 and RM1.50 respectively.

(b) (i) $x - 4 = \dfrac{x}{2}$

(ii) $x - 54 = 3 \times 22$

(iii) $p + p - q = 48$
$$2p - q = 48$$

(c)
$$y - x = 9 \qquad ...①$$
$$x + 1 = \frac{y}{2} \quad ...②$$
$$② \times 2, \ 2x + 2 = y \quad ...③$$
Substitute ③ into ②,
$$2x + 2 - x = 9$$
$$x = 9 - 2$$
$$x = 7$$
Substitute $x = 7$ into ③,
$$y = 2(7) + 2$$
$$y = 16$$