Fully-worked Solutions

Summative Practice

Section A

1 $\dfrac{xy + yz}{xy} = \dfrac{1(3) + 3(6)}{1(3)} = 7$
   Answer: **C**

2 $x(x + 3) = x^2 + 3x$
   Answer: **A**

3 $4n^2(5np + p^2) = 20n^3p + 4n^2p^2$
   Answer: **D**

4 One number is x, another number is $3x$.
   Sum of the two numbers, $S = 4x$
   Answer: **C**

5 $w = \dfrac{y(1 - z)}{x^2}$
   $w = \dfrac{(-1)(1 - 6)}{(1)^2} = 5$
   Answer: **C**

6 $F = \dfrac{9}{5}C + 32$
   $F = \dfrac{9}{5}(-65) + 32 = -85$
   Answer: **A**

7 Total payment $= 3p$
   Balance of money $= 50 - 3p$
   Answer: **D**

8 Number of child spectators
   $= 150 - 75 - 60 = 15$
   Answer: **A**

9 Perimeter $= 2(5m + 6n) + 2(m - 2n)$
   $= 10m + 12n + 2m - 4n$
   $= 12m + 8n$
   Answer: **C**

10 $2x - 5 - 21 = 14$
    $2x = 40$
    $x = 20$
    Answer: **D**

Section B

1 (a) (i) $J =$ Number of times the name John is recorded
           $x =$ Average number of times the name John is recorded for the remaining 12 pages
           $J = 20(4) + 12x$
           $J = 80 + 12x$

   $\boxed{20x \qquad 20 + 12x \qquad \boxed{80 + 12x} \qquad 80x + 12}$

      (ii) $x = 6$
           $J = 80 + 12(6) = 152$

   $\boxed{72 \qquad 80 \qquad 92 \qquad \boxed{152}}$

   (b) $5f - 2g + 8 = 5(2) - 2(-3) + 8$
                    $= 24$
       $3f^2 - g = 3(2)^2 - (-3)$
                $= 12 + 3$
                $= 15$
       $4(f + 3) = 4(2 + 3)$
                $= 4(5)$
                $= 20$
       $2(6 - fg) = 2(6 - 2(-3))$
                 $= 2(12)$
                 $= 24$
       Thus, $5f - 2g + 8$ and $2(6 - fg)$ have the same values.

   $\boxed{\boxed{5f - 2g + 8} \qquad 3f^2 - g \qquad 4(f + 3) \qquad \boxed{2(6 - fg)}}$

2 $3w(2v - w) - 2v(5w - 4) + 7$
   $= 6vw - 3w^2 - 10vw + 8v + 7$
   $= -4vw - 3w^2 + 8v + 7$
   (a) Coefficient of $vw = -4$
   (b) Coefficient of $w^2 = -3$
   (c) Coefficient of $v = 8$
   (d) Number of algebraic terms $= 4$

Section C

1 (a) (i) $K = x + 5y$
      (ii) Total cost, K
           $= 50 + 30(5)$
           $= 50 + 150$
           $= 200$ sen
           $= RM2$
      (iii) Total cost, K
            $= 80 + y(5)$
            $= 280$ sen
            $80 + 5y = 280$
                $5y = 200$
                 $y = 40$ sen

   (b) (i) $4n(nr - 7y^3) - 2y(-9y^2n + 8n^2r)$
           $= 4n^2r - 28ny^3 + 18ny^3 - 16n^2yr$
           $= 4n^2r - 10ny^3 - 16n^2yr$
      (ii) $\dfrac{4a^3b^2c^3 \times (-3a^2c^2)}{-6a^2bc}$
           $= \dfrac{-12a^5b^2c^5}{-6a^2bc}$
           $= 2a^3bc^4$

   (c) (i) $\dfrac{5rs^3}{} + 2rs^3 - 3r^3s - \dfrac{(-r^3s)}{}$
           $= 7rs^3 - 2r^3s$
      (ii) $7x^2 - 2(x^2 + 5) - \dfrac{(3 - x)}{}$
           $= 5x^2 + x - 13$