

Answer Key

1	(a) $b^3 - a$	(b) $\frac{6c}{\sqrt{a}}$	(c) $3f \times (4f + 5f)$ $= 3f \times 9f$ $= 27f^2$
2	$\frac{2x-1}{3} - \frac{x}{12}$ $= \frac{4(2x-1)}{12} - \frac{x}{12}$ $= \frac{8x-4}{12} - \frac{x}{12}$ $= \frac{7x-4}{12}$		
3	$4a - 3b + 8[3(a - b) + 2]$ $= 4a - 3b + 8 - [3a - 3b + 2]$ $= 4a - 4b + 8 - 3a + 3b - 2$ $= a + 6$		
4	(a) $15a^2b + 0ac$ $= 3a(5ab + 2c)$	(b) $(2v - w)(x + 1)^y + 2w(p + 1)$ $= (p + 1)(2v - w + 2w)$ $= (p + 1)(2v + w)$	
5	(a) $5 \times (-3)^2 - 4 \times (-3)^3$ $= 5 \times 9 - 4 \times (-27)$ $= 153$	(b) $\frac{4}{-3} + \frac{-3}{4}$ $= -\frac{4}{3} - \frac{3}{4}$ $= -2\frac{1}{12}$	
6	(a) $4x - 5 = 3(3 + 2x)$ $4x - 5 = 9 + 6x$ $-2x = 14$ $x = -7$	(b) $\frac{2}{x} = \frac{3}{x+2}$ $3x = 2(x + 2)$ $3x = 2x + 4$ $x = 4$	(c) $2 - \frac{x-9}{3} = -3$ $\frac{6-x+9}{3} = -3$ $15 - x = -9$ $x = 24$
7	(a) $4x$	(b) $4x + 20 = 2(x + 20)$ $4x + 20 = 2x + 40$ $2x = 20$ $x = 10$ $\therefore 20 \text{ years time}$ $= 4(10) + 20 = 60 \text{ years old.}$	

8	$x^3 = 661 - 4(9 + x^3)$ $x^3 = 661 - 46 - 4x^3$ $5x^3 = 625$ $x^3 = 125$ $x = \sqrt[3]{125}$ $x = 5$			
9	(a) $\frac{12-2}{4} = 2.5$ (b) $y = 2$ (c) $x = 2$			
10	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;"> (a) $3x + y - 4 = 0$ $y = -3x + 4$ $y - \text{intercept} = 4$ </td> <td style="width: 33%; border: none;"> (b) $y = -3x + 4$ $m = -3$ </td> <td style="width: 33%; border: none;"> (c) $Q(q, 0)$ substituting $y = 0$ and $x = q$ $3q + 0 - 4 = 0$ $3q = 4$ $q = \frac{4}{3}$ or $1\frac{1}{3}$ </td> </tr> </table>	(a) $3x + y - 4 = 0$ $y = -3x + 4$ $y - \text{intercept} = 4$	(b) $y = -3x + 4$ $m = -3$	(c) $Q(q, 0)$ substituting $y = 0$ and $x = q$ $3q + 0 - 4 = 0$ $3q = 4$ $q = \frac{4}{3}$ or $1\frac{1}{3}$
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