

(c) Solve these quadratic equations :

(i) $2x^2 = x + 10$

(ii) $7x = 34 - \frac{36}{x}$

(d) Using the quadratic formula, solve the following to 2 decimal places.

(i) $3x^2 - 10x + 6 = 0$

(ii) $x\left(x + \frac{3}{2}\right) = \frac{1}{2}$

Question 1 (20 marks)

- (a) $(x+3)(x+5)$ ✓
 (b) $(x-7)(x+6)$ ✓
 (c) $(2x+1)(x+3)$ ✓
 (d) $(x-4)(5x-2)$ ✓
 (e) $-(9x^2+3x-20) = -(3x+5)(3x-4)$ ✓
 $= (3x+5)(4-3x)$ ✓
 (f) $(x-5y)(x+5y)$ ✓
 (g) $3(16a^2-1)$ ✓
 $= 3(4a+1)(4a-1)$ ✓
 (h) $a(1+b)+1(b+1)$ ✓
 $= (a+1)(b+1)$ ✓
 (i) $(a-b)(a+b)+3(a+b)$ ✓
 $= (a+b)(a-b+3)$ ✓

Question 2 (14 marks)

- (a) $\frac{16a^3c^2}{5z^2}$ ✓ ✓
 (b) $\frac{3}{b}$ ✓
 (c) $\frac{x+6}{3}$ ✓
 (d) $x-3$ ✓
 (e) $\frac{1}{1-a} - \frac{a}{1-a}$ ✓
 $= \frac{1-a}{1-a} = 1$ ✓
 (f) $\frac{x+6}{(x+3)(x-3)}$ ✓
 (g) $\frac{-2(2x+5)}{(x+2)(x+3)}$ ✓

Question 3 (22 marks)

- (a) (i) $x = \frac{-(by+c)}{a}$ ✓
 (ii) $yx+yb = x+a$
 $yx-x = -yb+a$ ✓
 $x(y-1) = -yb+a$
 $x = \frac{-yb+a}{y-1}$ ✓
 (iii) $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$
 (b) (i) $x = 8\frac{2}{7}, y = -\frac{4}{7}$ ✓ ✓
 (ii) $x = 6, y = -2$ ✓ ✓
 (c) (i) $x = -2$ or $\frac{5}{2}$ ✓ ✓
 (ii) $x = \frac{17 \pm \sqrt{37}}{7}$ ✓ ✓
 (d) (i) $x = 2.55$ or 0.78 ✓ ✓
 (ii) $x = 0.28$ or -1.78 ✓ ✓