

Polynomial Test Review #2

Simplify

a) $(x-3)(x+4) = x^2 + 4x - 3x - 12 = x^2 + x - 12$ ①

b) $(x-3)(x^2 - 3x + 1) = x^3 - 3x^2 + x - 3x^2 + 9x - 3 = x^3 - 6x^2 + 10x - 3$ ①

c) $a - 4b(b^3 - 1) = a - 4b^4 + 4b$ ①

*What about
 $4 - 3(a+1)?$
 $4 - 3a - 3 = 1 - 3a$

2. Factor

a) $x^2 - 10x + 21 = (x-7)(x-3)$ ①

b) $6x^3y^5 - 8x^5z^2 = 2x^3(3y^5 - 4x^2z^2)$ ①

c) $7x^2 - 28b^2 = 7(x^2 - 4b^2) = 7(x-2b)(x+2b)$ ①

d) $3x^2 - 30x + 63 = 3(x^2 - 10x + 21) = 3(x-7)(x-3)$ ①

3. A rectangular field has an area of

$A = 2x^2 - 20x + 42$
 $A = 2(x^2 - 10x + 21)$

a) Find an expression for the length and width
~~(length and width)~~ $A = 2(x-7)(x-3)$
 length = $2(x-7)$ width = $(x-3)$

b) Find the actual length and width if $x = 10$ cm.
 Length = 6cm width = 7cm or $l = 3$ & $w = 14$ cm

Give an example of a perfect square trinomial, as $Ax^2 + Bx + C$.

5. Simplify

$$a) (2m+n+4)(3m+2n+1)$$

$$= 6m^2 + 4mn + 2m + 3mn + 2n^2 + n + 12m + 8n + 4$$

$$= 6m^2 + 2n^2 + 7mn + 14m + 9n + 4 \quad //3$$

$$b) 4(a+2)(a-4) - 3(2a+1)(2a+2)$$

$$= 4(a^2 - 2a - 8) - [3(4a^2 + 4a + 2a + 2)]$$

$$= 4a^2 - 8a - 32 - (12a^2 + 18a + 6)$$

$$= 4a^2 - 8a - 32 - 12a^2 - 18a - 6$$

$$= -8a^2 - 26a - 38$$

Yikes!! //3

$$c) 4 - (6x^2 + 3x) - 3 + 2x(3x - 1)$$

$$= 4 - 6x^2 - 3x - 3 + 6x^2 - 2x$$

$$= -5x + 1 \quad -\frac{1}{2} \text{ mark each TOTAL 4 marks}$$

$$6. a) 2x^2 - 7x + 5$$

$$= 2x^2 - 2x - 5x + 5$$

$$= 2x(x-1) - 5(x-1)$$

$$= (2x-5)(x-1)$$

$$b) 9x^2 - 54x + 81$$

$$= 9(x^2 - 6x + 9)$$

$$= 9(x-3)(x-3)$$

$$= 9(x-3)^2$$

$$c) 6(x^2 - 4)$$

$$= 6(x-2)(x+2)$$

$$d) 15x^2y^3 - 30x^3y^5 - 45x^2y^6$$

$$= 15x^2y^3(1 - 2xy^2 - 3y^3)$$