

Practice Problems...

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#8, 10, 11, 12, 13, 20

Factoring Quiz Tomorrow

Bonus:

[3 points]

Completely factor the following:

$$\underbrace{9y^2 - 30y + 25}_{\substack{3y \quad 5 \\ 3y^2 - 30y + 25}} - \underbrace{16x^2 - 24x + 9}_{\substack{4x \quad 3 \\ 16x^2 - 24x + 9}}$$

$$(9y^2 - 30y + 25) - (16x^2 - 24x + 9)$$

$$(3y - 5)^2 - (4x + 3)^2$$

$$\begin{aligned} & [(3y - 5) - (4x + 3)][(3y - 5) + (4x + 3)] \\ & (3y - 4x - 8)(3y + 4x - 2) \end{aligned}$$

Expand & Simplify: $(9x^2 + 25)$

$$(2x-3)(3x-5) - 2(3x-5)^2 + (x+3)(6x-3)$$

$$6x^2 - 10x - 9x + 15 - 2(9x^2 - 30x + 25) + 6x^2 - 3x + 18x - 9$$

$$6x^2 - 19x + 15 - 18x^2 + 60x - 50 + 6x^2 + 15x - 9$$

$$= -6x^2 + 56x - 44$$

NUMBERS, RELATIONS AND FUNCTIONS 10
QUIZ: FACTORING

NAME: _____
OCTOBER 2011

1. COMPLETELY FACTOR EACH OF THE FOLLOWING.

[25]

(a) $x^2 + 8x + 12$

$(x+6)(x+2)$

$5b - 4w$

(b) $3x^2 - 39x - 90$

$3(x^2 - 13x - 30)$
 $3(x-15)(x+2)$

$\bar{3}$

(c) $-12a^6b^4c^3 + 24a^4b^5 - 20a^2b^8c$

$4a^2b^4(-3a^4c^3 + 6a^2b - 5b^4c)$

$\bar{3}$

(d) $25b^2 - 16w^2$

$(5b-4w)(5b+4w)$

$\bar{2}$

(e) $3p^2 - 10p + 8$

$3p^2 - 6p - 4p + 8$
 $3p(p-2) - 4(p-2)$
 $(p-2)(3p-4)$

$\bar{3}$

(f) $49x^2 - 56x + 16$

$= (7x-4)^2$

$\bar{3}$

Why is the objective of factoring?

(g) $7y^4 - 7y^3 - 42y^2$

$7y^2(y^2 - y - 6)$
 $7y^2(y-3)(y+2)$

$\bar{3}$

(h) $8w^2 + 14w - 4$

$2(4w^2 + 7w - 2)$
 $2(4w^2 + 8w - w - 2)$
 $2[4w(w+2) - 1(w+2)]$
 $2(w+2)(4w-1)$

$\bar{3}$

$\sqrt{(x+7)^2} = x+7$

(i) $9(4x+1)^2 - 64(9x-1)^2$

$[3(4x+1) - 8(9x-1)][3(4x+1) + 8(9x-1)]$
 $(12x+3 - 72x+8)(12x+3+72x-8)$
 $(11-60x)(84x-5)$

$\bar{3}$

2. Expand and simplify the following:

$(3x-5)^2 - (x+7)(4x-3) + (2x+7)(x^2-x+6)$

[5]

$= 9x^2 - 30x + 25 - (4x^2 - 3x + 28x - 21) + 2x^3 - 2x^2 + 12x + 7x^2 - 7x + 42$
 $= 9x^2 - 30x + 25 - 4x^2 + 3x - 28x + 21 + 2x^3 - 2x^2 + 12x + 7x^2 - 7x + 42$
 $= 2x^3 + 10x^2 - 50x + 88$

Test: Wednesday

→ Factors, Multiples, Primes, Composites
"Numbers"

→ Expand & Simplify

→ Factoring

$$3. \quad 4a^2(9a-1) \\ (2a)(2a)(9a-1)$$

Attachments

Review - Quadratics.doc