HW: Worksheet/8-48 even

Warm up:

Factor.

1) $-16y^2 + 49 - 42x + 9x^2$

$9x^2 - 42x + 49 - 16y^2$

$(3x - 7)^2 - 16y^2$

$(3x - 7 + 4y)(3x - 7 - 4y)$

2) $20a^2 + 37a - 18$

$-360a^2$

$20a^2 + 45a - 8a - 18$

$5a(4a + 9) - 2(4a + 9)$

$(4a + 9)(5a - 2)$

HW Solutions

(58) $a^4 + b^4 - c^4 + 2a^2b^2$

$a^4 + 2a^2b^2 + b^4 - c^4$

$(a^2 + b^2)^2 - c^4$

$(a^2+b^2+c^2)(a^2+b^2-c^2)$

(48) $m^2 - n^2 - 2m + 1$

$m^2 - 2m + 1 - n^2$

$(m-1)^2 - n^2$

$(m-1+n)(m-1-n)$

62 $4s^2 - 4t^2 + 4s + 1$

$4s^2 + 4s + 1 - 4t^2$

$(2s+1)^2 - 4t^2$

$(2s+1+2t)(2s+1-2t)$

5b) $p^2 - q^2 - 2p + 2q$

$(p+q)(p-q) - 2(p-q)$

$(p-q)(p+q-2)$

(54) $m^2 - 9n^2 + 9 - 6m$

$m^2 - 6m + 9 - 9n^2$

$(m-3)^2 - 9n^2$

$(m-3+3n)(m-3-3n)$

(4) $4(x+y)^2 - (2y-z)^2$

$(2(x+y) + (2y-z))(2(x+y) - (2y-z))$

$(2x+2y+2y-z)(2x+2y-2y+z)$

$(2x+4y-z)(2x+z)$

$4a^2-b^2$

$(2a+b)(2a-b)$

(46) $x^2 - 2xy + y^2 - 4$

$(x - y)^2 - 4$

$(x - y + 2)(x - y - 2)$

(42) $4p^2-(q-2r)^2$

$$\frac{(2p+(q-2r))(2p-(q-2r))}{(2p+q-2r)(2p-q+2r)}$$

(48) $(a+2b)^2 - 9c^2$

$(a+2b+3c)(a+2b-3c)$

Factoring Completely

1) Factor out the greatest monomial factor
2) Look for difference of two squares
3) Look for a perfect square trinomial
4) If a trinomial is not a square, look for a pair of binomial factors
5) If there are 4 or more terms, look for a way to group them in pairs or in a group of three that is a perfect square trinomial.
6) Make sure that each factor is prime.

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Showdown

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$5a^2 + 10ab + 5b^2$

$5(a^2 + 2ab + b^2)$

$5(a + b)^2$

$4m^3 - m$

$m(4m^2 - 1)$

$m(2m + 1)(2m - 1)$

$$9u^2 - 9v^2 - 36w^2 + 36vw$$

$$9(u^2 - v^2 - 4w^2 + 4vw)$$

$$9(u^2 - (v^2 - 4vw + 4w^2))$$

$$9(u^2 - (v - 2w)^2)$$

$$9(u + (v - 2w))(u - (v - 2w))$$

$$9(u + v - 2w)(u - v + 2w)$$

$$100 + 4x^2 - 16y^2 - 40x$$

$$a^4 - b^4$$

$$2u^5 - 7u^3 - 4u$$

$$x^2 - xy - x + y$$

$$r^2 - 6r - 9s^2 + 9$$

$$p^2 - 1 - 4q^2 - 4q$$

$$6u^2v - 11u^2v^2 - 10u^2v^3$$

$$16c^{16} - 16$$

$$k(k + 1)(k + 2) - 3k(k + 1)$$

$$x^3 - x^2y - xy^2 + y^3$$

$$(a + b)^2 - (a - c)^2$$

$$2pq + 2pr + q^2 - r^2$$

$$u^2 - 4v^2 + 3u - 6v$$

$$a(a^2 - 9) - 2(a + 3)^2$$

$$a(a + 2)(a - 3) - 8(a - 3)$$