Name : _____ Period: _____

Factoring Quadratics

Factor each completely. If non-factorable, write "prime".

1) $8k^2 + 10k - 18$

$2(4k^2+5k-9)$ (-36)

$2(4k^2+9k-4k-9)$

$2[k(4k+9)-1(4k+9)]$

$\boxed{2(k-1)(4k+9)}$

2) $4h^2 + 12h - 40$

$4(h^2+3h-10)$

$\boxed{4(h+5)(h-2)}$

3) $16r^2 + 56r - 72$

$8(2r^2+7r-9)$ (-18)

$8(2r^2+9r-2r-9)$

$8[r(2r+9)-1(2r+9)]$

$\boxed{8(r-1)(2r+9)}$

4) $18z^2 - 12z - 16$

$2(9z^2-6z-8)$ (-72)

$2[9z^2-12z+6z-8]$

$2[3z(3z-4)+2(3z-4)]$

$\boxed{2(3z-4)(3z+2)}$

5) $45w^2 + 105w + 43$

↓

prime

1,43

$\boxed{\text{Prime}}$

6) $q^2 + 3q - 18$

$\boxed{(q+6)(q-3)}$

7) $6h^2 - 12h + 6$

$6(h^2-2h+1)$

$6(h-1)(h-1)$

$\boxed{6(h-1)^2}$

8) $d^2 - 2d - 24$

$\boxed{(d-6)(d+4)}$

9) $6w^2 + 20w - 16$ (-24)

$2(3w^2+10w-8)$

$2[3w^2+12w-2w-8]$

$2[3w(w+4)-2(w+4)]$

$\boxed{2(3w-2)(w+4)}$

10) $k^2 - 14k + 47$

$\_ * \_ = 47$ — Prime

1,47

$- + \_ = -14$

$\boxed{\text{Prime}}$

Name : _____ Period : _____

Factoring Review

Factor each completely. If non-factorable, write "Non-factorable".

1) $4p^2 + 18p + 20$

(20)

$2(2p^2 + 9p + 10)$

$2[2p^2 + 5p + 4p + 10]$

$2[p(2p+5) + 2(2p+5)]$

$\boxed{2(2p+5)(p+2)}$

2) $(25n^2 - 36)$

$\boxed{(5n-6)(5n+6)}$

3) $(9h^2 - 25)$

$\boxed{(3h-5)(3h+5)}$

4) $3z^2 - 33z + 72$

$3(z^2 - 11z + 24)$

$\boxed{3(z-8)(z-3)}$

5) $z^2 - 4z - 45$

$\boxed{(z-9)(z+5)}$

6) $(z^2 - 4z)$

$\boxed{z(z-4)}$

7) $(n^2 - 9n)$

$\boxed{n(n-9)}$

8) $18k^2 + 36k - 54$

(-12)

$9(2k^2 + 4k - 6)$

$9(2k^2 + 6k - 2k - 6)$

$9[2k(k+3) - 2(k+3)]$

always check!

$9(2k-2)(k+3)$

$\boxed{18(k-1)(k+3)}$

9) $(c^2 + 6c)$

$\boxed{c(c+6)}$

10) $20m^2 - 64m + 48$

60

$4(5m^2 - 16m + 12)$

$4[5m^2 - 10m - 6m + 12]$

$4[5m(m-2) - 6(m-2)]$

$\boxed{4(5m-6)(m-2)}$