

Name: KEY

## Review 2.4 - 2.6

1. Factor completely.

a)  $5pqr - pqs - 10pqt$

$$= pq(5r - s - 10t)$$

b)  $3x^5 - 6x^3 + 3x$

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

c)  $25w^5 - 6w^3$

$$= w^3(25w^2 - 6)$$

d)  $5rst - 15ab + 35cd$

$$= 5(rst - 3ab + 7cd)$$

2. Replace each  $\blacksquare$  with a number that will make each trinomial factor

a)  $x^2 + \blacksquare x + 10$

$$1 \times 10 \quad \text{sum} = 11$$

$$5 \times 2 \quad \text{sum} = 7$$

b)  $x^2 - 3x + \blacksquare$

$$2$$

$$-1 \times -2 \quad \text{sum} = -3$$

c)  $x^2 + \blacksquare x - 24$

$$-2 \times 12 \quad \text{sum} = 10$$

$$-4 \times 6 \quad \text{sum} = 2$$

$$-1 \times 24 \quad \text{sum} = 23$$

$$-3 \times 8 \quad \text{sum} = 5$$

d)  $x^2 - \blacksquare x - 50$

$$-25 \times 2 \quad \text{sum} = -23$$

$$-50 \times 1 \quad \text{sum} = -49$$

$$-10 \times 5 \quad \text{sum} = -5$$

3. Factor completely.

a)  $x^2 + 5x + 4$

$$= (x + 4)(x + 1)$$

b)  $r^2 - 13r + 42$

$$= (r - 6)(r - 7)$$

c)  $2y^2 + 9y + 9$

$$= 2y^2 + 6y + 3y + 9$$

$$= 2y(y + 3) + 3(y + 3)$$

$$= (y + 3)(2y + 3)$$

d)  $n^2 - 10n - 24$

$$= (n - 12)(n + 2)$$

$$\begin{aligned}
 \text{e) } & 4n^2 - 14n - 30 \quad \begin{array}{r} -120 \\ -20 \overline{) 6} \end{array} \\
 & = 4n^2 - 20n + 6n - 30 \\
 & = 4n(n-5) + 6(n-5) \\
 & = (n-5)(4n+6)
 \end{aligned}$$

$$\begin{aligned}
 \text{f) } & 5x^2 - 14x - 3 \quad \begin{array}{r} -15 \\ -15 \overline{) 1} \end{array} \\
 & = 5x^2 - 15x + 1x - 3 \\
 & = 5x(x-3) + (x-3) \\
 & = (x-3)(5x+1)
 \end{aligned}$$

4. Factor completely.

$$\begin{aligned}
 \text{a) } & 4n^2 - 28n + 49 \quad \begin{array}{r} 196 \\ -14 \overline{) 14} \end{array} \\
 & = 4n^2 - 14n - 14n + 49 \\
 & = 2n(2n-7) - 7(2n-7) \\
 & = (2n-7)^2
 \end{aligned}$$

$$\begin{aligned}
 \text{b) } & 25r^2 + 30r + 9 \quad \begin{array}{r} 225 \\ 15 \overline{) 15} \end{array} \\
 & = 25r^2 + 15r + 15r + 9 \\
 & = 5r(5r+3) + 3(5r+3) \\
 & = (5r+3)^2
 \end{aligned}$$

$$\begin{aligned}
 \text{c) } & 16x^2 - 121 \\
 & = (4x-11)(4x+11)
 \end{aligned}$$

$$\begin{aligned}
 \text{d) } & 1 - 144n^2 \\
 & = (1-12n)(1+12n)
 \end{aligned}$$

$$\begin{aligned}
 \text{e) } & x^2 + 17xy + 16y^2 \\
 & = (x+16y)(x+y)
 \end{aligned}$$

$$\begin{aligned}
 \text{f) } & c^2 - 13cd + 22d^2 \\
 & = (c-11d)(c-2d)
 \end{aligned}$$