W5 – Special Products

MPM2D

Jensen

1) Expand

a) $(x - 4)(x + 4)$

b) $(3y - 2)(3y + 2)$

c) $(5x - 1)(5x + 1)$

d) $(x + 4)^2$

e) $(3x + 2)^2$

f) $(3x + 7y)^2$

2) Factor

a) $x^2 - 25$

b) $y^2 - 49$

c) $9k^2 - 1$

d) $16k^2 - 49$

e) $25w^2 - 36$

f) $4 - 9w^2$

3) Factor

a) $x^2 - y^2$

b) $36x^2 - y^2$

c) $25r^2 - 36s^2$

d) $144r^2 - 49s^2$

e) $121x^2 - 9y^2$

f) $100r^2 - 81s^2$

4) Factor

a) $x^2 + 14x + 49$

b) $x^2 - 6x + 9$

c) $x^2 - 8x + 16$

d) $100 - 20x + x^2$

e) $4x^2 - 12xy + 9y^2$

f) $49x^2 + 56xy + 16y^2$

5) Factor if possible

a) $2a^2 + 12a + 18$

b) $25x^2 - 16y$

c) $75x^2 + 210xy + 147y^2$

d) $9x^3y - 16xy^3$ **e)** $36m^2 - 96mn + 64n^2$ **f)** $20x^2 + 20xy + 5y^2$

6) Determine the value(s) of k such that each trinomial is a perfect square.

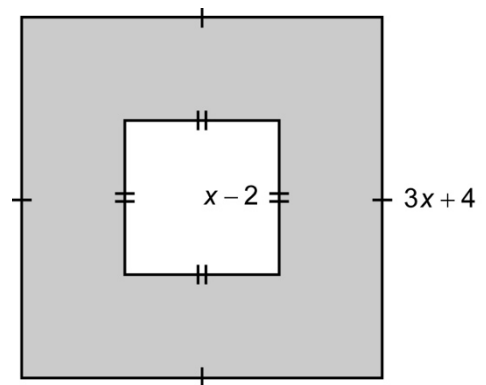**a)** $x^2 + kx + 16$ **b)** $9x^2 + kx + 49$ **c)** $x^2 + 4x + k$

d) $4x^2 - 12x + k$ **e)** $kx^2 + 40x + 16$ **f)** $kx^2 - 24xy + 9y^2$

7) Find an algebraic expression for the area of the shaded region in factored form

8) The area of a volleyball court can be represented by the trinomial $2x^2 - 4x + 2$.

a) Factor the trinomial completely

b) If the length of the court is twice the width, use the factors to write the expressions that represent the length and width.

c) If $x = 10$ m, what are the length and width of the court.