Name: _____ Date: _____

Learning Goal 1.2	Factor trinomials of the form $ax^2 + bx + c$.

Assignment - Answers

1. Identify each polynomial as a perfect square trinomial, a difference of squares, or neither.

a. $25 - t^2$
$= (5 - t)(5 + t)$
difference of squares

b. $16m^2 + 49n^2$
neither

c. $4x^2 - 24xy + 9y^2$
neither

d. $9m^2 - 24mn + 16n^2$
$= (3m - 4n)^2$
perfect squares trinomial

2. Factor each binomial.

a. $x^2 - 49$
$= (x + 7)(x - 7)$

b. $b^2 - 121$
$= (b + 11)(b - 11)$

c. $1 - q^2$
$= (1 - q)(1 + q)$

d. $36 - c^2$
$= (6 - c)(6 + c)$

e. $9d^2 - 16f^2$
$= (3d - 4f)(3d + 4f)$

f. $25s^2 - 64t^2$
$= (5s - 8t)(5s + 8t)$

g. $144a^2 - 9b^2$
$= (12a - 3b)(12a + 3b)$

h. $121m^2 - n^2$
$= (11m + n)(11m - n)$

i. $8m^2 - 72n^2$
$= 8(m - 3n)(m + 3n)$

j. $12x^2 - 27y^2$
$= 3(2x + 3y)(2x - 3y)$

k. $-18b^2 + 128c^2$
$= -2(3b + 8c)(3b - 8c)$

l. $81a^2b^2 - 1$
$= (9ab + 1)(9ab - 1)$

3. Factor each trinomial.

a. $a^2 + 10a + 25$
$= (a + 5)^2$

b. $b^2 - 12b + 36$
$= (b - 6)^2$

c. $c^2 + 14c + 49$
$= (c + 7)^2$

d. $d^2 - 16d + 64$
$= (d - 8)^2$

e. $h^2 + 18h + 81$
$= (h + 9)^2$

f. $f^2 - 20f + 100$
$= (f - 10)^2$

g. $4x^2 - 12x + 9$
$= (2x - 3)^2$

h. $9 + 30n + 25n^2$
$= (3 + 5n)^2$

i. $81 - 36v + 4v^2$
$= (9 - 2v)^2$

j. $25 + 40h + 16h^2$
$= (5 + 4h)^2$

k. $9g^2 + 48g + 64$
$= (3g + 8)^2$

l. $49r^2 - 28r + 4$
$= (7r - 2)^2$

m. $4x^2 + 28xy + 49y^2$
$= (2x + 7y)^2$

n. $16r^2 + 8rt + t^2$
$= (4r + t)^2$

o. $9a^2 - 42ab + 49b^2$
$= (3a - 7b)^2$

p. $8z^2 + 8yz + 2y^2$
$= 2(2z + y)^2$

q. $8p^2 + 40pq + 50q^2$
$= 2(2p + 5q)^2$

r. $x^4 - 12x^2 + 36$
$= (x^2 - 6)^2$

s. $a^4 - 8a^2b^2 + 16b^4$
$= (a^2 - 4b^2)^2$

t. $y^4 - 4y^2z + 4z^2$
$= (y^2 - 2z)^2$

4. Determine the area of the shaded region. Simplify your answer.

$$A = (x + 6)(5x + 4)$$