Unit 10.2 Factoring Trinomials and Special Cases

1. Factor each of the trinomials
    a. $x^2 - x - 12$

    b. $x^2 - 8x + 16$

    c. $x^2 + 7x + 12$

    d. $x^2 - x - 72$

    e. $z^2 - 15z + 54$

    f. $a^2 + 10a + 25$

g. $20x^4 + 40x^3 - 20x^2$

h. $21y^2 + 19y - 2$

i. $5x^2 - 19x + 18$

j. $10x^2 + 27x + 18$

k. $x^3 + 10x^2 + 21x$

l. $4p^4 + 36p^3 + 32p^2$

m. $2a^4 - 8a^3 - 120a^2$

n. $5a^2 + 10a - 30$

o. $20a^4 + 40a^3 + 20a^2$

p. $3y^5 - 21\ y^4 - 24y^3$

2. Factor each of the following using difference of squares method

a. $7a^2b - 7b$

b. $x^6 - 225$

c. $-4x^2 + 144$

d. $4x^3y - 64xy$

3. Factor the following using the sum or difference of cubes method

   a. $z^2 - 12z + 36$

   b. $4y^2 + 12y + 9$

   c. $2x^3 - 8x^2y + 8xy^2$

   d. $(16x^2 + 8x + 1) - y^2$

   e. $x^3 - 8$

   f. $x^6 + 64y^3$

   g. $16y^{12} - 250$

   h. $125x^3 - 27$

4. Factor each expression, if it cannot be factored, write N/a

   a. $m^2 + 7m + 6$

   b. $x^2 + 10x + 25$

   c. $-5x^2 + 70x - 240$

   d. $16x^3 - 100x$

   e. $6x^2 - 11x + 4$

   f. $36x^3 + 21x^2 - 30x$

   g. $x^2 - 100$

h. $64a^2 - 1$

i. $y^2 + 64$

j. $12n^2 - 60n - 75$

k. $-x^3 + 8x^2 + 5x - 40$

l. $x^6y^3 - 125$

m. $9x^2 - (y + 6)^2$

n. $4x^2 + 100$