Name: _____
CC Algebra

Factoring Completely

1) Which of the following represents $8x^2 + 48x + 72$ after it has been factored completely?

A) $(8x + 24)(x + 3)$
B) $4(2x + 3)(x + 6)$
C) $8(x + 3)(x + 3)$
D) $8(x^2 + 6x + 9)$

2) When factored completely, the expression $p^4 - 81$ is equivalent to

A) $(p + 3)(p - 3)(p + 3)(p - 3)$
B) $(p^2 + 9)(p + 3)(p - 3)$
C) $(p^2 + 9)(p^2 - 9)$
D) $(p^2 - 9)(p^2 - 9)$

3) Factor the given polynomial completely:

$30a^2 - 5a - 75$

Answer: _____

Questions 4 through 9 refer to the following:

Factor the given polynomial completely:

4) $x^3 - 36x$

5) $9c^2 - 9d^2$

6) $2y^2 + 20y + 18$

7) $m^3 + 6m^2 - 16m$

8) $xy^2 - 5xy + 6x$

9) $72 - 2y^2$

10) Factor the expression $x^4 + 6x^2 - 7$ completely.

Show your work.

Answer: _____

1) C 2) B

3) $5(3a - 5)(2a + 3)$

4) $x(x + 6)(x - 6)$

5) $9(c + d)(c - d)$

6) $2(y + 9)(y + 1)$

7) $m(m + 8)(m - 2)$

8) $x(y - 3)(y - 2)$

9) $2(6 + y)(6 - y)$

10) $(x^2 + 7)(x - 1)(x + 1)$
WORK SHOWN: $x^4 + 6x^2 - 7$, $(x^2 + 7)(x^2 - 1)$, $(x^2 + 7)(x - 1)(x + 1)$