ANSWER KEY

COMMON CORE ALGEBRA II
HOMEWORK #1-2
FACTORING REVIEW

Factor each of the following completely.

1) $25x^8 - 9$

$(5x^4+3)(5x^4-3)$

2) $3x^2 + 11x + 6$

$3x^2+9x+2x+6$

$3x(x+3)+2(x+3)$

$(x+3)(3x+2)$

3) $2x^3 - 5x^2 + 18x - 45$

$x^2(2x-5)+9(2x-5)$

$(2x-5)(x^2+9)$

4) $-8x^2 + 3x^4 + 4$

$3x^4-8x^2+4$

$3x^4-6x^2-2x^2+4$

$3x^2(x^2-2)-2(x^2-2)$

$(x^2-2)(3x^2-2)$

5) $-3x^4 + 30x^3 - 75x^2$

$-3x^2(x^2-10x+25)$

$-3x^2(x-5)(x-5)$

$-3x^2(x-5)^2$

6) $x^4 - 7x^2 - 18$

$(x^2+2)(x^2-9)$

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

7) $18x^3 - 27x^2 - 2x + 3$

$9x^2(2x-3)-1(2x-3)$

$(2x-3)(9x^2-1)$

$(2x-3)(3x+1)(3x-1)$

8) $2x^4 - 32$

$2(x^4-16)$

$2(x^2+4)(x^2-4)$

$2(x^2+4)(x+2)(x-2)$

9) Challenge Question: $x^{2m} - 36y^6$

$(x^m+6y^3)(x^m-6y^3)$

10) A company produces x units of a product per month, where $C(x)$ represents the total cost and $R(x)$ represents the total revenue for the month. The functions are modeled by $C(x) = 250x + 100$ and $R(x) = x^2 + 480x - 82$. The profit is the difference between revenue and cost where $P(x) = R(x) - C(x)$. What is the total profit, $P(x)$, for the month?

$$P(x) = R(x) - C(x)$$

$$P(x) = x^2 + 480x - 82 - (250x + 100)$$

$$P(x) = x^2 + 480x - 82 - 250x - 100$$

$$\boxed{P(x) = x^2 + 230x - 182}$$