

Name: _____ Pre Calculus 11: Review Factoring Difference of Squares:

$$a^2 - b^2 = (a - b)(a + b) \quad ma^2 - mb^2 = m(a - b)(a + b) \quad (a + k)^2 - b^2 = [(a + k) - b][(a + k) + b]$$

1. When factoring a difference of squares, why do both terms need to be perfect squares?
2. Are the following perfect squares? If yes, indicate what the term is after you square root it?

a) $16a^2b^2$	b) $(8a - 1)^2$	c) $9a^2b^2c^3$
d) $(2a - 5)^4$	e) $\frac{32a^3b}{50ab^5}$	f) $\frac{(3a - b)^3}{12a - 4b}$

3. What does it mean that two binomials are conjugates? Explain?

4. If one binomial is $(5x^2 + 8y)$, what is the conjugate? Explain

5. Factor each of the following completely

a) $144 - a^2$	b) $900x^2 - y^2$
c) $-121b^2 + a^2$	d) $1 - x^2y^2$
e) $100a^2 - b^2$	f) $\frac{64a^2}{81} - \frac{b^2}{121}$

g) $\frac{49a^2}{9} - \frac{25b^2}{16}$	h) $\frac{a^2}{100} - \frac{1}{81}$
i) $72a^2b^2 - 2$	j) $300a^3 - 3ab^2c^2$
k) $450a^2b^2c - 32c^3$	l) $9 - y^6$
m) $81a^4 - b^4$	n) $16a^4 - 81b^4$
o) $(c+1)^2 - 25$	p) $(2c-3)^4 - 16d^4$
q) $10xy(9x+27y) - 15xy^2(x^2-9y^2)$	r) $(3a-4b)^4 - (2a-3b)^4$