Name: _____

Factoring Special Products

1) Factor the following polynomials.

1) $x^3 + 64$
2) $m^3 - 1$
3) $p^3 - 27$
4) $x^3 + 125$
5) $x^3 - y^3$
6) $c^3 + d^3$
7) $125a^3 - 8b^3$
8) $64x^3 - 27y^3$

2) Factor the following polynomials.

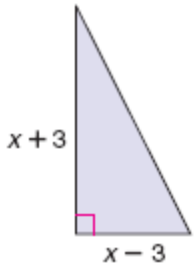
1) $2x^2 - 18$
2) $-8x^2 + 8$
3) $-5x^4 + 20x^2$
4) $3x^3 - 75x$
5) $9x^5 - 100x^3$
6) $49x^{12} - 64x^{10}$

3) Find the value of c that makes each trinomial a perfect square.

1) $r^2 + 16r + c$
2) $k^2 + 12k + c$
3) $p^2 + 4p + c$
4) $n^2 + 2n + c$
5) $f^2 + 8f + c$
6) $s^2 - 18s + c$
7) $x^2 - 20x + c$
8) $r^2 - 14r + c$
9) $w^2 + 30w + c$
10) $h^2 + 10h + c$
11) $z^2 + 2z + c$
12) $m^2 - 6m + c$
13) $q^2 + 26q + c$
14) $t^2 + 28t + c$
15) $y^2 + 22y + c$
16) $z^2 + 24z + c$

4) Tavon drew plans for a square shed to put in his backyard. He then decided that he didn't want the shed to be square, so he reduced one dimension by a number and increased the other dimension by that same number. The new area of the shed floor is $x^2 - 16$. Factor this expression.

5) The area of a triangle is given by the expression $\frac{1}{2}bh$, where *b* represents the length of the base and *h* represents the height. Suppose a right triangle has a base that measures *x* - 3 units and a height of *x* + 3 units.



1) Express the area of the triangle as a difference of two monomials.

2) Find the area of the triangle if *x* = 5.