

~~Factor~~ Factor the following polynomials:

1. $(x + 9)^2$ 2. $(y + 11)(y - 11)$

fact $\rightarrow x^2 + 18x + 81$ $y^2 - 121$ \rightarrow

3. Binomial square? $x^2 + 25x + 25$

NO

4. Difference of 2 squares? $4x^2 + 49$

NO \rightarrow

FACTOR: Binomial squares, solve # 5

5. $x^2 - 16x + 64 = 0$

$(x-8)(x-8) = 0$

$(x-8)^2 = 0$

$x = 8$

6. $9y^2 + 60yz + 100z^2$

$(3y+10z)(3y+10z)$

$(3y+10z)^2$

FACTOR: Difference of 2 squares, solve #7

7. $x^2 - 289 = 0$

8. $121x^2y^2 - 144$

$(x+17)(x-17) = 0$

$(11xy+12)(11xy-12)$

$x = -17, 17$

9. Factor

$25x - xy^2$

$x(25 - y^2)$

$x(5-y)(5+y)$

10. Factor & Solve

$5x^2 - 5x = 0$

$5x(x-1) = 0$

$5x = 0$ $x-1 = 0$

$x = 0$ $x = 1$

11. Factor by Grouping $(x^4 - 3x^2 + x^2 - 3)$

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

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

12. Factor: $-5/3y + 25/36 = -y^2$

$+y^2$ $+y^2$

$y^2 - \frac{5}{3}y + \frac{25}{36} = 0$

$(y - \frac{5}{6})(y - \frac{5}{6}) = 0$

$y - \frac{5}{6} = 0$

$y = \frac{5}{6}$

$(y - \frac{5}{6})(y - \frac{5}{6})$

$y^2 - \frac{5}{6}y - \frac{5}{6}y + \frac{25}{36}$

$y^2 - \frac{10}{6}y + \frac{25}{36}$

$y^2 - \frac{5}{3}y + \frac{25}{36}$

13. Solve the equation: $x^4 - 81 = 0$

$(x^2+9)(x^2-9) = 0$

$(x^2+9)(x+3)(x-3) = 0$

$x^2+9=0$ $x+3=0$ $x-3=0$
 Imaginary \rightarrow $x^2=-9$ $x=-3$ $x=3$

14. Determine the value of k for which the expression is a perfect square trinomial.

$x^2 + kx + 81$

$(x+9)(x+9)$

$x^2 + 9x + 9x + 81$

$x^2 + 18x + 81$