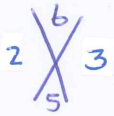
Name ANSWER KEY

PreCalculus; Sec 2.0 – Factoring Review

Examples

Solve the equations by factoring.

1. $x^2 + 5x + 6 = 0$



$(x+2)(x+3)=0$

$\boxed{x=-2,-3}$

2. $3x^2 + 5x - 2 = 0$

$(x+2)(3x-1)=0$

$\boxed{x=-2,\ 1/3}$

Solve the equations by factoring.

1. $k^2 + 11k + 30 = 0$

$(K+5)(K+6)=0$

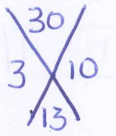
$\boxed{K=-5,-6}$

2. $t^2 + 7t + 10 = 0$

$(t+2)(t+5)=0$

$\boxed{t=-2,-5}$

3. $2k^2 + 13k + 15 = 0$



$(2K+3)(K+5)=0$

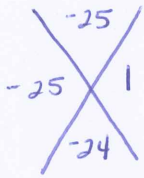
$\boxed{K=-3/2,-5}$

4. $n^2 - 6n - 40 = 0$

$(n-10)(n+4)=0$

$\boxed{n=10,-4}$

5. $5d^2 - 24d - 5 = 0$



$(5d+1)(d-5)=0$

$\boxed{d=-1/5,5}$

6. $2g^2 - g - 15 = 0$

$(2g+5)(g-3)=0$

$\boxed{g=-5/2,3}$

Examples

Write the quadratic formula.

$$x = \frac{-B \pm \sqrt{B^2-4AC}}{2A}$$

Solve the equation using the quadratic formula.

3. $2m^2 - 7m - 13 = -10$

$2m^2-7m-3=0$

$$x = \frac{7 \pm \sqrt{49+24}}{4} = \boxed{\frac{7 \pm \sqrt{73}}{4}}$$

Solve each equation using the quadratic formula.

7. $9n^2 = 4 + 7n$

$9n^2-7n-4=0$

$$n = \frac{7 \pm \sqrt{49+144}}{18} = \boxed{\frac{7 \pm \sqrt{193}}{18}}$$

8. $8n^2 + 4n - 16 = -n^2$

$9n^2+4n-16=0$

$$n = \frac{-4 \pm \sqrt{16+576}}{18} = \frac{-4 \pm \sqrt{592}}{18}$$

$$= \boxed{\frac{-2 \pm 2\sqrt{37}}{9}}$$

9. $8n^2 + 7n - 15 = -7$

$8n^2+7n+8=0$

$$n = \frac{-7 \pm \sqrt{49+256}}{16}$$

$$= \boxed{\frac{-7 \pm \sqrt{305}}{16}}$$

Examples

If you have more than 3 terms, how do you have to factor?

FACTOR BY GROUPING

Solve the equation by factoring.

4. $8h^3 + 4h^2 + 10h + 5 = 0$

$4h^2(2h+1) + 5(2h+1) = 0$

$(4h^2+5)(2h+1) = 0$

$h = -1/2$

Solve the equation by factoring.

10. $2h^3 + 8h^2 + 9h + 36 = 0$

$2h^2(h+4) + 9(h+4) = 0$

$(2h^2+9)(h+4) = 0$

$h = -4$

11. $6x^3 + 9x^2 + 2x + 3 = 0$

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

$(3x^2+1)(2x+3) = 0$

$x = -3/2$

12. $36r^3 - 27r^2 - 8r + 6 = 0$

$9r^2(4r-3) - 2(4r-3) = 0$

$(9r^2-2)(4r-3) = 0$

$r = 3/4$

$9r^2 = 2$

$r^2 = 2/9$

$r = \pm\sqrt{2}/3$