2.9 Assignment
Factor Polynomials Completely

Math I

p. 95 2 – 10 even, 14, 16,

20 – 26 even, 30

Factor the expression.

2. $12(a - 3) - 2a(a - 3)$ **(12 – 2a)(a – 3)**

4. $2b^2(b + 6) + 3(b + 6)$ **$(2b^2 + 3)(b + 6)$**

6. $3x(4 + y) - 6(4 + y)$ **(3x – 6)(4 + y)**

Factor the polynomial by grouping.

8. $y^3 - 14y^2 + y - 14$

$(y^3 - 14y^2) + (y - 14)$

$y^2(y - 14) + 1(y - 14)$

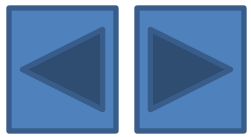
$(y^2 + 1)(y - 14)$

10. $p^3 + 9p^2 + 4p + 36$

$(p^3 + 9p^2) + (4p + 36)$

$p^2(p + 9) + 4(p + 9)$

$(p^2 + 4)(p + 9)$



Factor the polynomial completely.

14. $4m^3 - 16m$

$4m(m^2 - 4)$

$4m[m^2 - (2)^2]$

$4m(m - 2)(m + 2)$

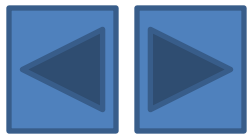
16. $48r^3 - 30r^2$

$6r^2(8r - 5)$

20. $6x^2 + 6x - 120$

$6(x^2 + x - 20)$

$6(x + 5)(x - 4)$



Factor the polynomial completely.

22. $9x^3 + 36x^2 + 36$

$9(x^3 + 4x^2 + 4)$

24. $d^3 + 4d^2 + 5d + 20$

$d^2(d + 4) + 5(d + 4)$

$(d^2 + 5)(d + 4)$

Solve the equation.

26. $10x^2 = 250$

$x^2 = 25$

$x^2 - 25 = 0$

$(x - 5)(x + 5) = 0$

$x - 5 = 0$ $\quad$ $x + 5 = 0$

$x = 5$ $\quad$ $x = -5$

30. $-18x^2 - 60x - 50 = 0$

$-2(9x^2 + 30x + 25) = 0$

$-2[(3x)^2 + 2((3x)(5) + 5^2] = 0$

$-2(3x + 5)^2 = 0$

$3x + 5 = 0$

$3x = -5$

$$x = -\frac{5}{3}$$