# Intermediate Algebra
## Chapter 3/4 Test

1. Solve a system of equations

| Solve using substitution: | Solve using addition (elimination): |
|---|---|
| $5x - 2y = 4$ <br> $y - 3x = -3$ | $3x - 2y = 13$ <br> $4x + y = 21$ |

2. Add or subtract polynomials

| $(5x^2 - 7x + 2) + (3x^2 - 2x + 4)$ | $(8x^2 - 2x + 1) - (5x^2 - 4x - 7)$ |
|---|---|

3. Multiply polynomials

| $(4x - 1)(7x + 2)$ | $4x(x^2 - 3x + 1)$ |
|---|---|

4. Find the special product

$(x - 3)^2$

5. Divide using long division

| $\dfrac{x^2 - 3x + 5}{x - 2}$ | $\dfrac{4x + x^3 + 2}{x - 2}$ |
|---|---|

6. Divide using synthetic division

| $\dfrac{x^3 - 4x^2 + 8x - 1}{x + 1}$ | $\dfrac{x^5 - 4}{x - 2}$ |
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7. Factor using Difference of Two Squares and Grouping:

| $6x^2 - 2ax - 3bx + ab$ | $9x^2 - 16$ |
|---|---|

8. Factor using the P-S-D method

| $x^2 - 16x - 80$ | $x^2 + 34x + 120$ |
|---|---|

9. Factor using the Key # method

| $30x^2 - 23x + 2$ | $9x^2 - 29x + 6$ |
|---|---|

10. Solve equations using zero factor property

| $x^2 + 2x - 80 = 0$ | $15x^2 - 11x = -2$ |
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