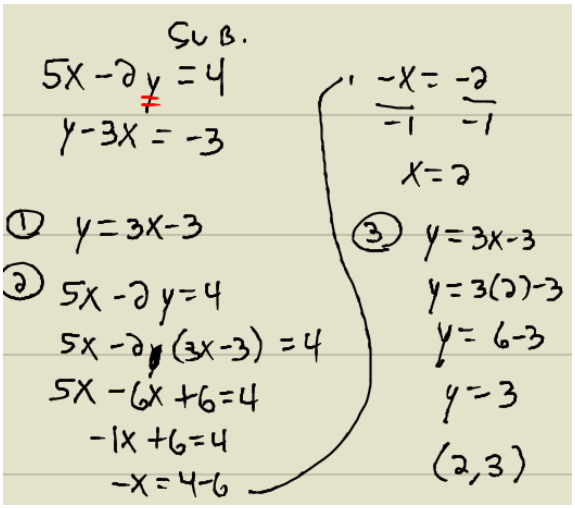
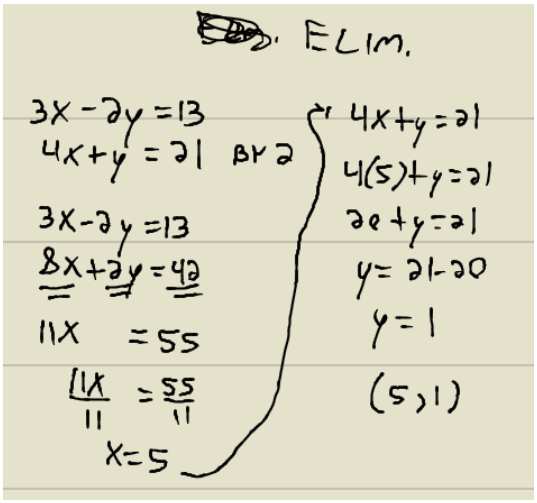
Intermediate Algebra
Chapter 3/4 Test

1. Solve a system of equations

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

2. Add or subtract polynomials

$(5x^2-7x+2)+(3x^2-2x+4)$	$(8x^2-2x+1)-(5x^2-4x-7)$
$(5x^2-7x+2)+(3x^2-2x+4)$ $5x^2-7x+2+3x^2-2x+4$ $8x^2-9x+6$	$(8x^2-2x+1)-(5x^2-4x-7)$ $8x^2-2x+1-5x^2+4x+7$ $3x^2+2x+8$

3. Multiply polynomials

$(4x-1)(7x+2)$	$4x(x^2-3x+1)$
$(4x-1)(7x+2)$ $4x(7x)+4x(2)-1(7x)-1(2)$ $28x^2+8x-7x-2$ $28x^2+x-2$	$4x(x^2-3x+1)$ $4x(x^2)+4x(-3x)+4x(1)$ $4x^3-12x^2+4x$

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4. Find the special product

$(x-3)^2$

$(x-3)^2$

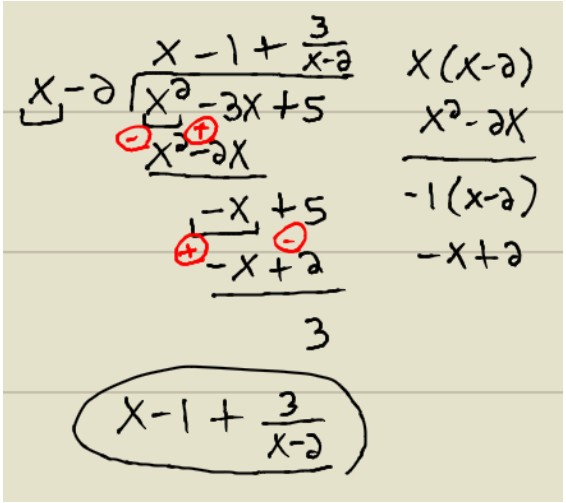
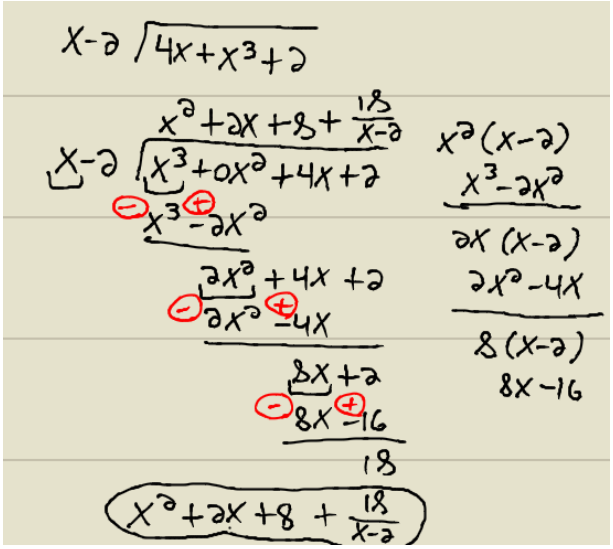
$(x-3)(x-3)$

$x(x)+x(-3)-3(x)-3(-3)$

$x^2-3x-3x+9$

x^2-6x+9

5. Divide using long division

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

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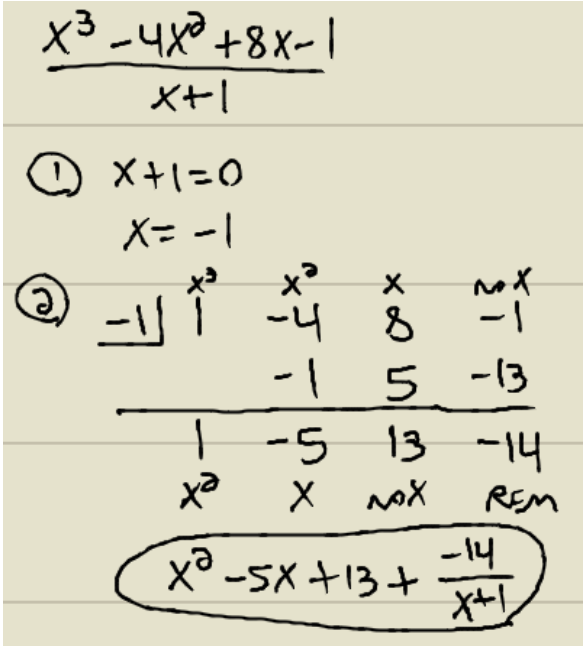
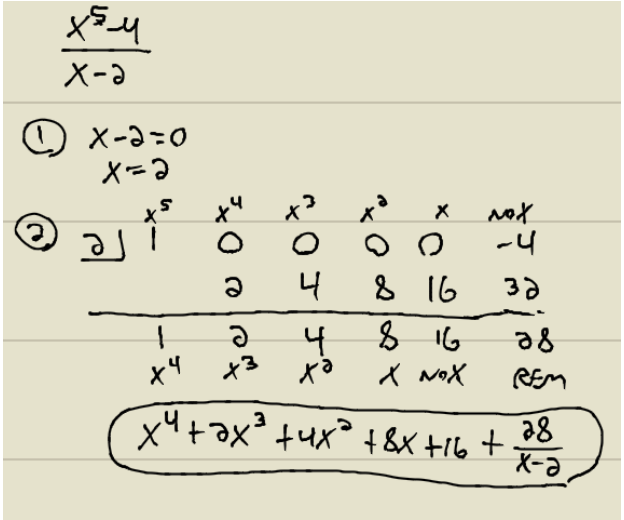
6. Divide using synthetic division

$\frac{x^3-4x^2+8x-1}{x+1}$	$\frac{x^5-4}{x-2}$
	

7. Factor using Difference of Two Squares and Grouping:

$6x^2-2ax-3bx+ab$	$9x^2-16$
$6x^2-2ax-3bx+ab$ $2x(3x-a)-b(3x-a)$ $(3x-a)(2x-b)$	$9x^2-16$ $(3x)^2-(4)^2$ $(3x+4)(3x-4)$

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8. Factor using the P-S-D method

$x^2-16x-80$	$x^2+34x+120$
$x^2-16x-80$ $(x+4)(x-20)$ 80 P S D 1·80 81 79 2·40 42 38 4·20 24 (16) 5·16 21 11 8·10 18 2	$x^2+34x+120$ $(x+4)(x+30)$ 120 P S D 1·120 121 119 2·60 62 58 3·40 43 37 4·30 (34) 26 5·24 29 19 6·20 26 14 8·15 23 7 10·12 22 2

9. Factor using the Key # method

$30x^2-23x+2$	$9x^2-29x+6$
$30x^2-23x+2$ $30x^2-20x-3x+2$ $10x(3x-2)-1(3x-2)$ $(3x-2)(10x-1)$ $ac=30(2)=60$ P S D 1·60 61 59 2·30 32 28 3·20 (23) 17 4·15 19 11 5·12 17 7 6·10 16 4	$9x^2-29x+6$ $9x^2-27x-2x+6$ $9x(x-3)-2(x-3)$ $(x-3)(9x-2)$ $ac=9(6)=54$ P S D 1·54 55 53 2·27 (29) 25 3·18 21 15 6·9 15 3

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10. Solve equations using zero factor property

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