

ALGEBRA I

Name key

Chapter 8 Practice Test

Period _____

State the degree and put each polynomial in descending powers of x .

Degree Descending powers of x

1) $2x^3 - x + 3x^7 - 5$	7	$3x^7 + 2x^3 - x - 5$
2) $24x^2y - 12x^3y^2 + 6x^4 - 8y^3$ 3 5 4 3	5	$6x^4 - 12x^3y^2 + 24x^2y - 8y^3$
3) Express 320,285 in Scientific notation.		3.20285×10^5
4) Express 6.41×10^{-5} in Standard notation.		0.0000641

Perform the indicated operations and simplify.

5) $5x^2y(5x^3 - 7y^5)$ $25x^5y - 35x^2y^6$	6) $(4x^2 + 6xy - 3y^2) + (x^2 + 2xy + 5y^2)$ $5x^2 + 4xy + 2y^2$
7) $(x + 8)(x - 3)$ $x^2 - 3x + 8x - 24$ $x^2 + 5x - 24$	8) $5x^2(3x + 7) - 4x(5x^2 - x + 11)$ $15x^3 + 35x^2 - 20x^3 + 4x^2 - 44x$ $-5x^3 + 37x^2 - 44x$
9) $-9xy(x^2 - 7xy + 8y^2)$ $-9x^3y + 63x^2y^2 - 72xy^3$	10) $(4x^2 - 8x + 7) + (2x^2 + 2x + 15)$ $2x^2 - 10x + 22$
11) $(3x - 8)(x + 9)$ $3x^2 + 27x - 8x - 72$ $3x^2 + 19x - 72$	12) $(x - 4)(x - 12)$ $x^2 - 12x - 4x + 48$ $x^2 - 16x + 48$

<p>13) $(11x^2 - 12x + 15) + (2x^3 - 12x^2 - 5)$ $2x^3 - x^2 - 12x + 10$</p>	<p>14) $(8x - 9y)^2 (8x - 9y)(8x - 9y)$ $64x^2 - 72xy - 72xy + 81y^2$ $64x^2 - 144xy + 81y^2$</p>
<p>15) $3x(4x - 8) + 8(2x^2 - 5x + 7)$ $12x^2 - 24x + 16x^2 - 40x + 56$ $28x^2 - 64x + 56$</p>	<p>16) $9x^4y^2(8x^2 - 6xy + y^2)$ $72x^6y^2 - 54x^5y^3 + 9x^4y^4$</p>
<p>17) $(11x^2 - 8x + 12) + 7(2x - 9)$ $11x^2 - 8x + 12 + 14x - 63$ $11x^2 + 6x - 51$</p>	<p>18) $(y + 8)^2 (y + 8)(y + 8)$ $y^2 + 8y + 8y + 64$ $y^2 + 16y + 64$</p>
<p>19) $(5x - 7y)(5x + 7y)$ $25x^2 + 35xy - 35xy - 49y^2$ $25x^2 - 49y^2$</p>	<p>20) $(\frac{1}{2}x^2 + y)(\frac{1}{2}x^2 - y)$ $\frac{1}{4}x^4 - \frac{1}{2}x^2y + \frac{1}{2}x^2y - y^2$ $\frac{1}{4}x^4 - y^2$</p>
<p>21) $(15x^2 + 11y) + (15x^2 + 11y)$ $22y$</p>	<p>22) $-8x^5(6x^2 - 4x + 3)$ $-48x^7 + 32x^6 - 24x^5$</p>
<p>23) $(7x^2 - y)(8x^2 - 6y)$ $56x^4 - 42x^2y - 8x^2y + 6y^2$ $56x^4 - 50x^2y + 6y^2$</p>	<p>24) $(5x + 7)(x^2 - x + 1)$ $5x^3 - 5x^2 + 5x + 7x^2 - 7x + 7$ $5x^3 + 2x^2 - 2x + 7$</p>

Simplify, Express ALL exponents as POSITIVE numbers.

<p>25) $\frac{-22x^{-5}y^{-7}}{-2x^8}$</p> <p>$\frac{-22}{-2x^8x^5y^7} = \frac{11}{x^{13}y^7}$</p>	<p>26) $\frac{-18x^{10}y^{-9}}{3x^4y}$</p> <p>$\frac{-18x^{10}}{3x^4yy^9} = \frac{-6x^6}{y^{10}}$</p>	<p>27) $(-9x^{-3}y^4)^2$</p> <p>$(-9)^2x^{-6}y^8$</p> <p>$\frac{81y^8}{x^6}$</p>
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SOLVE each problem

<p>28) $-2(4y-3)-8y+6=4(y-2)$</p> <p>$-8y+6-8y+6=4y-8$</p> <p>$-16y+12=4y-8$</p> <p>$-4y \quad -4y$</p> <hr style="width: 100%;"/> <p>$-20y+12=-8$</p> <p>$-12 \quad -12$</p> <hr style="width: 100%;"/> <p>$-20y=-20$</p> <p>$\frac{-20}{-20} \quad \frac{-20}{-20}$</p> <p>$y=1$</p>	<p>29) $3(y+5)-(4y-8)=-2y+10$</p> <p>$3y+15-4y+8=-2y+10$</p> <p>$-y+23=-2y+10$</p> <p>$+2y \quad +2y$</p> <hr style="width: 100%;"/> <p>$y+23=10$</p> <p>$-23 \quad -23$</p> <hr style="width: 100%;"/> <p>$y=-13$</p>
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<p>30) $6(x-2)+14=-3(-x-2)-10$</p> <p>$6x-12+14=3x+6-10$</p> <p>$6x+2=3x-4$</p> <p>$-3x \quad -3x$</p> <hr style="width: 100%;"/> <p>$3x+2=-4$</p> <p>$-2 \quad -2$</p> <hr style="width: 100%;"/> <p>$3x=-6$</p> <p>$\frac{3}{3} \quad \frac{-6}{3}$</p> <p>$x=-2$</p>
