Your Name: September 16th 2025

Math 115E Activity 9

Miscellaneous Review

Algebraic Rules (better table)		
$ax + bx = (a + b)x$	$a(bx) = abx$	$a(b + c) = ab + ac$
$x^a \cdot x^b = x^{a+b}$	$(x^a)^b = x^{ab}$	$(xy)^a = x^a y^a$
$x^{-a} = \frac{1}{x^a}$	$\frac{x^a}{x^b} = x^{a-b}$	$\left(\frac{x}{y}\right)^a = \frac{x^a}{y^a}$
$(x + y)^2 \longrightarrow (x + y)(x + y) \longrightarrow x(x + y) + y(x + y) \longrightarrow x^2 + xy + xy + y^2 \longrightarrow x^2 + 2xy + y^2$		

Section 1: Algebra

Solve the following algebraic equations or simply each expression

1. Find $-1 + 3(1 - 2)$
2. Find $2 \cdot 12(2 + (-2))$
3. Find $(-2)^2 + 17(3)$
4. Find $2 \cdot 3 - (3 + (-4))$
5. Find $12 + 3(4 + 5)^2$
6. Find $3(2 + 3)^2 + 3(-2) - 20$
7. Find $2 \cdot 7 + 3 \cdot (2 - 12) + 6 \cdot 2$
8. Find $2 \cdot (7 + 3) \cdot (2 - 12) + 6 \cdot 2$
9. Find $2 \cdot 7 + 3 \cdot ((2 - 12) + 6) \cdot 2$
10. Find $-2 \cdot -3 \cdot -4 + -5$
11. Find $-2 + -3 \cdot -4 \cdot -5$
12. Find $-2 \cdot -3 + -4 \cdot -5$