Name_____ ID: 1

Summer Assignment

Date_____ Period____

Simplify each expression.

1) $(6x^3 + 2x - 2x^2) - (2x^2 + x^3 + 4x)$

2) $(5a^3 - 4 + 8a^2) - (3a^3 - 2a^2 + 1)$

Evaluate each function.

3) $f(n) = n^2 + 4n$; Find $f(5)$

4) $h(n) = 3n - 1$; Find $h(6)$

Simplify.

5) $3m^3n^4 \cdot m^3$

6) $x^4y^4 \cdot 4x^2y^3$

Simplify. Your answer should contain only positive exponents.

7) $\dfrac{3a^3 b^2}{2a^2 b^2}$

8) $\dfrac{2xy}{4x^3 y^2}$

Simplify.

9) $\left(u^3 v^3\right)^4$

10) $\left(x^2 y^2\right)^2$

Find each product.

11) $5n^2(4n + 4)$

12) $(6n + 3)(4n + 1)$

13) $\left(4x^2 - 5x - 8\right)(4x - 2)$

14) $(4x + 5)^2$

Factor each completely.

15) $4r^2 - 25$

16) $9m^2 - 6m + 1$

17) $16r^3 + 8r^2 - 2r - 1$

18) $2x^2 + 24x + 64$

19) $9m^2 - 48m + 60$

20) $10m^2 - 37m + 30$

Simplify each expression.

21) $\dfrac{\dfrac{4}{3} - \dfrac{12}{25}}{\dfrac{1}{4}}$

22) $\dfrac{\dfrac{5}{4} - \dfrac{25}{4}}{5}$

23) $\dfrac{4u}{6v} + \dfrac{2u}{3}$

24) $\dfrac{k+1}{k-6} + \dfrac{3}{4k^3}$

Simplify.

25) $\sqrt{32x^2}$

26) $\sqrt{54ab^2}$

Solve each equation by taking square roots.

27) $3n^2 + 2 = 194$

28) $7k^2 + 9 = 37$

Simplify.

29) $3\sqrt{2} + 3\sqrt{3} - 2\sqrt{27}$

30) $-3\sqrt{6} - \sqrt{18} + 3\sqrt{2}$