Secondary Math 2 Name_____

Unit 1 Algebra Basics Review

Period____

With each polynomial name the type, the degree, how many terms, all coefficients, and all constants.

1) $-8n$

Type:

Degree:

Terms:

Coefficients:

Constants:

linear monomial

2) $7p^3 + 8$

Type:

Degree:

Terms:

Coefficients:

Constants:

cubic monomial

3) $-x^5 - 9x^3 + 6x - 2$

Type:

Degree:

Terms:

Coefficients:

Constants:

cubic polynomial with four terms

4) $-10p^4+2p^2+1$

Type:

Degree:

Terms:

Coefficients:

Constants:

fourth degree monomial

Simplify each expression.

5) $-(-4 - 4v)$

$4 + 4v$

6) $-2(8 + 9b) - 9$

$-25 - 18b$

7) $-9(9x + 5) - (4x - 4)$

$-85x - 41$

8) $(x - 3x^2) + (x^2 - 4x)$

$-2x^2 - 3x$

9) $(7v^3 + 6 + 5v) - (5v^3 - 2)$

$2v^3 + 5v + 8$

10) $(8k^3 + 2k^2) + (4k^3 + 5 + 2k^2)$

$12k^3 + 4k^2 + 5$

Find each product.

11) $(8a+5)(7a+5)$

$56a^2+75a+25$

12) $(a+1)(3a-1)$

$3a^2+2a-1$

13) $(7k+8)(2k^2+8k+6)$

$14k^3+72k^2+106k+48$

14) $(7p^2+8p+6)(3p-8)$

$21p^3-32p^2-46p-48$

15) $(t-4)^2$

16) $(6w+1)^2$

Simplify.

17) $3x\cdot(x^2)^0$

$3x$

18) $(2m\cdot m^3m^2)^2$

$4m^{12}$

19) $(a^2)^3\cdot a^3$

a^9

20) $3p^2\cdot(3p^3)^2$

$27p^8$

21) $(x^2\cdot x\cdot x)^3$

x^{12}

22) $(3b^3\cdot b)^3$

$27b^{12}$

Simplify. Your answer should contain only positive exponents.

23) $\dfrac{2n^{-4}\cdot 2n^4}{(2n^3)^3}$

$\dfrac{1}{2n^9}$

24) $\dfrac{m}{(2m^4\cdot m^4)^2}$

$\dfrac{1}{4m^{15}}$

25) $\dfrac{xx^{-4}}{(2x^{-4})^0}$

$\dfrac{1}{x^3}$

26) $\dfrac{2xy\cdot(2yx^0)^2}{x^0}$

$8xy^3$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

27) $\dfrac{x^{\frac{2}{3}} \cdot \left(x^2\right)^{\frac{5}{3}} \cdot x^0}{x^{-2}}$

x^6

28) $\dfrac{\left(b^2 \cdot a^2 b^2\right)^{\frac{1}{2}}}{a^0 b^2}$

a

Write each expression in exponential form.

29) $\sqrt[3]{4v}$

$(4v)^{\frac{1}{3}}$

30) $\left(\sqrt[6]{n}\right)^5$

$n^{\frac{5}{6}}$

31) $\left(\sqrt[6]{2v}\right)^5$

$(2v)^{\frac{5}{6}}$

32) $\sqrt[3]{4r^2}$

$(4r^2)^{\frac{1}{3}}$

33) $\left(\sqrt{2a}\right)^3$

$(2a)^{\frac{3}{2}}$

34) $\left(\sqrt{x}\right)^3$

$x^{\frac{3}{2}}$

Write each expression in radical form.

35) $n^{\frac{3}{2}}$

$\left(\sqrt{n}\right)^3$

36) $(5k)^{\frac{2}{3}}$

$\left(\sqrt[3]{5k}\right)^2$

37) $(10n)^{\frac{1}{4}}$

$\sqrt[4]{10n}$

38) $(2r)^{\frac{7}{6}}$

$\left(\sqrt[6]{2r}\right)^7$

39) $(5n)^{\frac{3}{4}}$

$\left(\sqrt[4]{5n}\right)^3$

40) $x^{\frac{5}{2}}$

$\left(\sqrt{x}\right)^5$

