

## Unit 1 TEST REVIEW

Date \_\_\_\_\_ Period \_\_\_\_\_

**Draw the Real Number system and provide examples of Rational and Irrational numbers on your diagram.**

1)

**Using unit conversion, answer the following questions:**

2)

**Classify the parts of an expression:**

3)  $-3x + 8y - 2$

What is the coefficient of  $x$ ?

What is the constant?

4)  $2x - 3y + 7$

What is the coefficient of  $x$ ?

What is the constant?

Name all the terms of the expression

**Simplify each expression.**

5)  $(14n^5 - 9n^4 - 8n^3) + (3n^5 + 2n^3 + n)$

6)  $(12x + 7 + 2x^3) + (13x^3 + 11 - 11x)$

7)  $(5x^3y - 7x^4y) + (-6y^4 + x^3y - 2x^4y) - (10y^4 + 8x^3y)$

8)  $(7a^3b^2 + 13ab^2) - (11ab^2 + 3b^2 - 14a^3b^2) + (-6b^4 - 11b^2)$

**Find each product.**

9)  $(8x^2 + 5)^2$

10)  $(7 + 8r)^2$

11)  $(4r - 4)(4r + 4)$

12)  $(6x^2 + 3)^2$

13)  $(-3m^2 - m + 5)(2m^2 - 6m - 8)$

14)  $(-5k^2 - 8k + 3)(7k^2 + 5k - 6)$

**Simplify.**

15)  $-2\sqrt{63x^3yz^2}$

16)  $-2\sqrt{100hj^3k^5}$

**Simplify.**

17)  $2\sqrt{32} + 3\sqrt{48} - \sqrt{2} + 2\sqrt{2}$

18)  $3\sqrt{24} + 3\sqrt{112} - 4\sqrt{63} + 3\sqrt{54}$

19)  $\sqrt{3}(\sqrt{3} + 3)$

20)  $\sqrt{2}(\sqrt{10} - 3\sqrt{2})$

21)  $(5\sqrt{2} - 4\sqrt{7k})(5\sqrt{2k} - \sqrt{7})$

22)  $(-4\sqrt{5r} - 2)(7\sqrt{5} - 4)$

**Write each expression in radical form.**

23)

**Write each expression using rational exponents.**

24)

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What is the coefficient of  $x$ ?

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Name all the terms of the expression

**Simplify each expression.**

5)  $(14n^5 - 9n^4 - 8n^3) + (3n^5 + 2n^3 + n)$

$17n^5 - 9n^4 - 6n^3 + n$

6)  $(12x + 7 + 2x^3) + (13x^3 + 11 - 11x)$

$15x^3 + x + 18$

7)  $(5x^3y - 7x^4y) + (-6y^4 + x^3y - 2x^4y) - (10y^4 + 8x^3y)$

$-9x^4y - 2x^3y - 16y^4$

8)  $(7a^3b^2 + 13ab^2) - (11ab^2 + 3b^2 - 14a^3b^2) + (-6b^4 - 11b^2)$

$21a^3b^2 - 6b^4 + 2ab^2 - 14b^2$

**Find each product.**

$$9) (8x^2 + 5)^2 \\ 64x^4 + 80x^2 + 25$$

$$11) (4r - 4)(4r + 4) \\ 16r^2 - 16$$

$$13) (-3m^2 - m + 5)(2m^2 - 6m - 8) \\ -6m^4 + 16m^3 + 40m^2 - 22m - 40$$

$$10) (7 + 8r)^2 \\ 49 + 112r + 64r^2$$

$$12) (6x^2 + 3)^2 \\ 36x^4 + 36x^2 + 9$$

$$14) (-5k^2 - 8k + 3)(7k^2 + 5k - 6) \\ -35k^4 - 81k^3 + 11k^2 + 63k - 18$$

**Simplify.**

$$15) -2\sqrt{63x^3yz^2} \\ -6|x| \cdot |z| \sqrt{7xy}$$

$$16) -2\sqrt{100hj^3k^5} \\ -20k^2|j| \sqrt{hjk}$$

**Simplify.**

$$17) 2\sqrt{32} + 3\sqrt{48} - \sqrt{2} + 2\sqrt{2} \\ 9\sqrt{2} + 12\sqrt{3}$$

$$19) \sqrt{3}(\sqrt{3} + 3) \\ 3 + 3\sqrt{3}$$

$$21) (5\sqrt{2} - 4\sqrt{7k})(5\sqrt{2k} - \sqrt{7}) \\ 78\sqrt{k} - 5\sqrt{14} - 20k\sqrt{14}$$

$$18) 3\sqrt{24} + 3\sqrt{112} - 4\sqrt{63} + 3\sqrt{54} \\ 15\sqrt{6}$$

$$20) \sqrt{2}(\sqrt{10} - 3\sqrt{2}) \\ 2\sqrt{5} - 6$$

$$22) (-4\sqrt{5r} - 2)(7\sqrt{5} - 4) \\ -140\sqrt{r} + 16\sqrt{5r} - 14\sqrt{5} + 8$$

**Write each expression in radical form.**

23)

**Write each expression using rational exponents.**

24)