Foundations of College Algebra Summer Work

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Express the set in interval notation.

1)

-3

1) _____

Graph the set and express it in interval notation.

2) $\{x \mid x > 5\}$

2) _____

Determine whether the statement is true or false.

3) $0.\overline{15} \in Z$

3) _____

List the elements of $A \cap B$.

4) $A = \{-29, 14, 13, -20, 11, -2\}$ and $B = \{-27, -10, 13, 11\}$

4) _____

Simplify by writing the expression without absolute value bars.

5) $|w - 2|$ for $w < 2$

5) _____

6) $|x + 7|$ for $x \geq -7$

6) _____

Write an absolute value expression to represent the distance between the two points on the number line and simplify.

7) -3 and 2

7) _____

Determine the intersection $X \cap Y$. **Express the answer in interval notation.**

8) $X = \{x \mid x \geq 18\}$ and $Y = \{x \mid x < 11\}$

8) _____

Evaluate the root without using a calculator or note that root is not a real number.

9) $\sqrt[3]{-125}$

9) _____

10) $\sqrt[3]{64}$

10) _____

Apply the associative property of addition.

11) $(r + 3) + 7$

11) _____

Apply the associative property of multiplication.

12) $-\frac{5}{11}\left(-\frac{11}{5}p\right)$

12) _____

1

Apply the commutative property of multiplication.

13) $w \cdot \dfrac{5}{6}$

13) _____

Solve the problem.

14) A tool rental store charges a flat fee of \$8.50 to rent a chain saw, and \$4.00 for each day, including the first. Use a linear equation to find the cost of renting the saw for one week.

14) _____

Write the set as a single interval.

15) $(-\infty, 5) \cap (-6, 8) \cap [1,6]$

15) _____

Evaluate the expression for the given values of the variables.

16) $\dfrac{-q}{4t}$ for $q = -3$, $t = 2$

16) _____

Solve the problem.

17) The width of a rectangle is 2 ft less than 4 times the length. Write a model for the width W in terms of the length L.

17) _____

18) If $n > 0$, then $9n - |9n| =$

18) _____

Write the set as a single interval.

19) $\left[(-\infty, 7) \cup (12, \infty)\right] \cap [10, 15)$

19) _____

Clear parentheses by applying the distributive property.

20) $4(4s - 4) - 1(8t - 2u)$

20) _____

Clear parentheses and combine _like_ terms.

21) $-2x(4 - 3x) + 16x^2 - 7x$

21) _____

22) $-11z^3 - 8z^3 - z^3$

22) _____

Simplify.

23) $\left(\dfrac{19}{9}\right)^0$

23) _____

Simplify the expression. Write your answer with positive exponents only.

24) $\dfrac{18^{12}}{18^5}$

24) _____

Simplify.

25) $4x^{-4}$

25) _____

Convert the expression to radical form and simplify.

26) $9^{1/2}$

26) _____

Factor out the greatest common factor.

27) $12r^2s - 24rs^2 + 18rs$

27) _____

Factor the trinomial completely by using any method. Remember to look for a common factor first.

28) $4p^2 + 3p - 5$

28) _____

29) $2w^3 - 16w^2x + 32wx^2$

29) _____

Factor out the indicated quantity.

30) $-40q^4r + 56q^3r - 24q^2r$. Factor out the quantity $-8q^2r$

30) _____

Factor out the greatest common factor.

31) $14k^2\left(10k^2 + 5\right) - 2k\left(10k^2 + 5\right)$

31) _____

Simplify.

32) $\dfrac{3(x+h)^2 + 4(x+h) - \left(3x^2 + 4x\right)}{h}$

32) _____

Multiply the rational expressions.

33) $\dfrac{2x^2 - 2x - 12}{x + 5} \cdot \dfrac{x^2 - 25}{2x^2 + 4x}$

33) _____

Simplify the complex fraction.

34) $\dfrac{\dfrac{2}{a} + \dfrac{2}{b}}{\dfrac{8}{ab}}$

_____

Write the answer as a single term and simplify.

35) $\dfrac{6\sqrt{x+4} - \dfrac{5x}{\sqrt{x+4}}}{\left(\sqrt{x+4}\right)^2}$

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