2018 Summer Assignment for Pre-Calculus

Students who did not receive an A on the Spring Final Exam (2018) for Algebra-2 will need to complete this summer assignment. Complete problems #1-22 on a separate sheet of paper. Please turn in to your Pre-Calc teacher on the first day of class for the 2018-2019 school year.

1. If $\frac{x}{8} > x$, which could be a value for x?

A -1 B 0 C 2 D $\frac{1}{4}$

2. If $0 < a < 1$, which of the following increases as a decreases?

F $a - 1$ G $a^2 - 1$ H $\frac{1}{a}$ J a^2

3. If $3x - 2$ is an odd integer, what is the next consecutive odd integer?

A $3x - 1$ B $3x - 3$ C $3x + 1$ D $3x$

4. Jody sold 4 more than twice the number of cars that Laura sold. If Laura sold c cars, how many more did Jody sell than Laura?

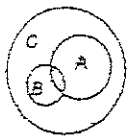
F 4 G $c + 4$ H $3c + 4$ J $2c + 4$

5. If $8 - 3z = 16 + 5z$, then what is the value of $4z$?

A -16 B -4 C 1 D 12

6. Which Venn diagram models the relationships among the sets $A = \{1, 2, 3\}$, $B = \{-4, 0\}$, and $C = \{\text{positive integers}\}$?

F



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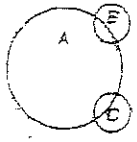

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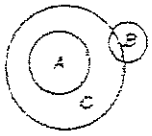

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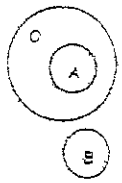

7. Divide using synthetic division: $(2x^3 - 3x + 5) \div (x - 2)$

8. For the function $y = |3 - x|$, what does y equal when $x = 4$.

9. Solve the inequality $-\frac{5}{3}x \leq 15$.

10. Solve the system using an algebraic method: $6x - 2y = -6$
$9x - 3y = 15$

11. What is the slope of a line that is perpendicular to the graph of $5x + 4y = 7$?

A $-\frac{5}{4}$ B $\frac{5}{4}$ C $-\frac{4}{5}$ D $\frac{4}{5}$

12. The graph of which equation is a line with undefined slope that passes through (5, 1)?

F $y = 1$ G $y = 5$ H $x = 1$ J $x = 5$

13. Which point does not satisfy the inequality $y < |2x - 3|$?

A (0, 2) B (−1, −3) C (1, 3) D (2, 0)

14. To solve the system of equations $3x - y = 5$ and $2x + 3y = 18$, which expression could be substituted for y in the second equation?

F $5 - 3x$ G $3x - 5$ H $6 - \frac{2}{3}x$ J $18 - 2x$

15. Graph: $f(x) = 3(4)^x - 1$

16. Graph: $f(x) = \log_2(x - 1) + 4$

17. Solve $2x^2 = x + 1$ by graphing. If exact roots cannot be found, state the consecutive integers between which the roots are located.

18. Find $(f + g)(x)$, $(f - g)(x)$, $(f \cdot g)(x)$, and $\left(\frac{f}{g}\right)(x)$ for $f(x) = x^2 + 2x - 15$ and $g(x) = 2x - 1$.

For Questions 19 and 20, simplify.

19. $\frac{10mp^4}{r^2} \div \left(\frac{5mp}{r^3}\right)^2$

20. $\frac{12x^4y^5+8x^3y^7-16x^2y^6}{4xy^5}$

21. Write an exponential function for the graph that passes through (0, 4) and (−2, 100).

22. Solve: $3^{4x} = 9^{3x+7}$