

- _____ 1. Let f be a function such that $f(x) = 2x - 4$ is defined on the domain $2 \leq x \leq 6$. The range of this function is
- A. $0 \leq y \leq 8$
B. $0 \leq y < \infty$
C. $2 \leq y \leq 6$
D. $-\infty < y < \infty$
- _____ 2. Which ordered pair is in the solution set of both the inequalities $y \leq 3x + 1$ and $x - y > 1$?
- A. $(-1, -2)$
B. $(2, -1)$
C. $(1, 2)$
D. $(-1, 2)$
- _____ 3. If $k = am + 3mx$, the value of m in terms of a , k , and x can be expressed as
- A. $\frac{k}{a+3x}$ B. $\frac{k-3mx}{a}$
C. $\frac{k-am}{3x}$ D. $\frac{k-a}{3x}$
- _____ 4. When $6x^2 - 4x + 3$ is subtracted from $3x^2 - 2x + 3$ the result is
- A. $3x^2 - 2x$
B. $-3x^2 + 2x$
C. $3x^2 - 6x + 6$
D. $-3x^2 - 6x + 6$
- _____ 5. What is the slope of a line that passes through the points $(-5, 4)$ and $(15, -4)$?
- A. $-\frac{2}{5}$
B. 0
C. $-\frac{5}{2}$
D. undefined
- _____ 6. If $2x + 5 = -25$ and $-3m - 6 = 48$ what is the product of x and m ?
- A. -270
B. -33
C. 3
D. 270

Short Answer

Please show all work on a separate piece of paper and/or graph paper.

7. Solve algebraically:
$$\frac{2}{3x} + \frac{4}{x} = \frac{7}{x+1}$$

8. The sum of three consecutive odd integers is 18 less than five times the middle number. Find the three integers. [Only an algebraic solution can receive full credit.]

9. John has four more nickels than dimes in his pocket, for a total of \$1.25. How many nickels and dimes does he have? [Only an algebraic solution can receive full credit.]

10. Solve algebraically for x : $2(x-4) \geq \frac{1}{2}(5-3x)$

11. Solve the equation for a in terms of x : $4(ax+3) = 3ax - 25 + 3a$

12. The volume of a large can of tuna fish can be calculated using the formula $V = \pi r^2 h$. Write an equation to find the radius, r , in terms of V and h . Determine the diameter, to the nearest inch, of a large can of tuna fish that has a volume of 66 cubic inches and a height of 3.3 inches.

13. David has two jobs. He earns \$8 per hour babysitting his neighbor's children and he earns \$11 per hour working at the coffee shop. **Write an inequality to represent the number of hours, x , babysitting and the number of hours, y , working at the coffee shop that David will need to work to earn a minimum of \$200.** David worked 15 hours at the coffee shop. **Use the inequality to find the number of full hours he must babysit to reach his goal of \$200.**

14. Simplify the following expression: $2x(3x^2+5) - 3(4x^2-9) - 2(x^2-4x-6)$

15. If $f(x) = \frac{x}{x^2-16}$, what is the value of $f(10)$?

16. For $y = \frac{3}{\sqrt{x-4}}$ what are the domain and range?