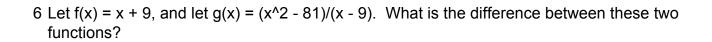


2 If
$$y = 8x - 2$$
, what is the value of y when $x = 6$?

3 What is the value of
$$6q$$
 if $q = 4s$ and $s = 10$?

4 What is the value of -6p if
$$p = 8s + 3$$
 and $s = 8$?

5 What is the value of 3r if
$$r = -4v - 8$$
 and $v = 3$?

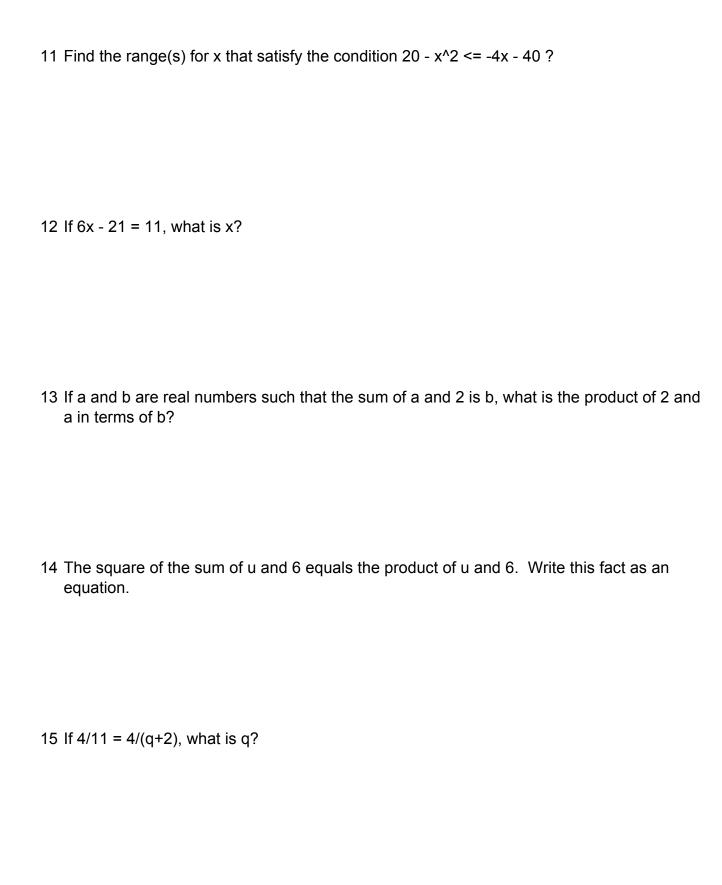


7 We define a new operator, @, such that a @ b = a^b - b^a. What is 4 @ 2?

8 Let y and z be positive integers, with y>z. Define an operation @ as follows: $y@z = 3^{(y+z)} / 3^{(y-z)}$. What is 9@1?

9 (T/F): 5 < 0

10 (T/F): -2 < -2



1	ANSWER: 2x^2y^2. EXPLANATION: Divide the 2 by 1, the x^6 by x^4, and the y^5 by y^3. Remember that you divide exponents by subtracting.
2	ANSWER: 46
3	ANSWER: 240. EXPLANATION: If $q = 4s$ and $s = 10$, then we substitute 10 for s and find that $q = 4 \times 10$, or 40. Since the question asks us to find the value of 6q, we simply multiply 6 by 40 to get the answer.
4	ANSWER: -402. EXPLANATION: If $p = 8s + 3$ and $s = 8$, then we substitute 8 for s and find that $p = 8 \times 8 + 3$, or 67. Since the question asks us to find the value of -6p, we simply multiply -6 by 67 to get the answer.
5	ANSWER: -60. EXPLANATION: If $r = -4v - 8$ and $v = 3$, then we substitute 3 for v and find that $r = -4 \times 3 - 8$, or -20. Since the question asks us to find the value of 3r, we simply multiply 3 by -20 to get the answer.

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6	ANSWER: The functions are identical, other than $g(x)$ being undefined where $x=9$ EXPLANATION: Divide the denominator of $g(x)$ into the numerator of $g(x)$ to see that the functions appear to be identical. However, note that $g(x)$ is undefined when the denominator is 0, because division by 0 is undefined.
7	ANSWER: 0. EXPLANATION: By the definition of the function, 4 @ $2 = 4^2 - 2^4$. We know that $4^2=16$, and $2^4=16$. We then subtract to find the difference.
8	ANSWER: 9. EXPLANATION: In this case, the value of y does not matter. The difference between the exponents in the numerator (y+1) and the denominator (y-1) will always be 2. Therefore, when you divide the numerator by the denominator, your answer will be 3^2, regardless of the value of y.
9	ANSWER: False
10	ANSWER: False

11	ANSWER: $x \ge 10$ and $x \le -6$. EXPLANATION: Add x^2 to both sides of the equation,
	and subtract 20 from both sides of the equation, and you get $0 \le x^2 - 4x - 60$. Factor,
	and you get $0 \le (x - 10)(x + 6)$. The right side of the equation equals 0 when $x = 10$ or $x = -6$
	6, and it is greater than 0 when $x > 10$ or $x < -6$.

12 ANSWER: 5 1/3. EXPLANATION: Begin by adding 21 to both sides of the equation, which yields 6x = 32. Then divide both sides by 6 to get x = 32/6. Finally, convert this improper fraction to the correct form, 5 1/3.

13 ANSWER: 2(b-2). EXPLANATION: The problem asks for the product of 2 and a, which is obviously 2a. However, it asks for this sum in terms of b. Since we know that 2 + a = b, then a = b-2, and we can use this equation to substitute for a to get the answer in terms of b.

14 ANSWER: (u + 6)^2 = 6u. EXPLANATION: The sum of u and 6 is simply u + 6. To square it, we must put parentheses around it, because raising a number to a power is higher in the order of operations than adding. In other words, if we wrote u + 6^2, only the 6 would be squared. To finish, we simply write an equals sign (=), and then the product of u and 6, which is simply 6u.

15 ANSWER: 9. EXPLANATION: Because the numerators on both sides of the equals sign are the same, the denominators must also be the same. Therefore, we simply need to solve the equation q+2=11.