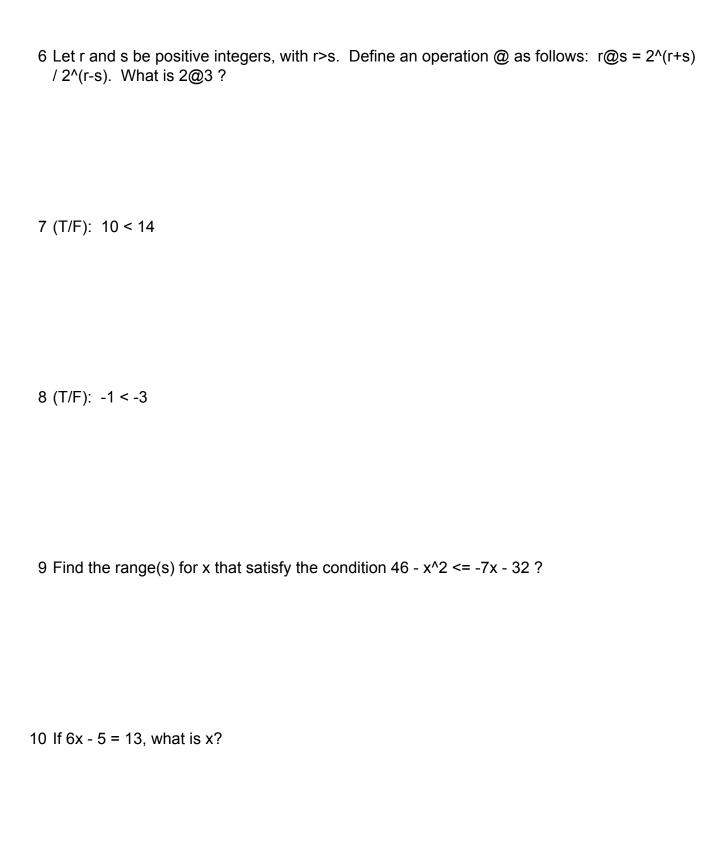
1 What is the value of 11r if r = 4t and t	= 3?
--	------

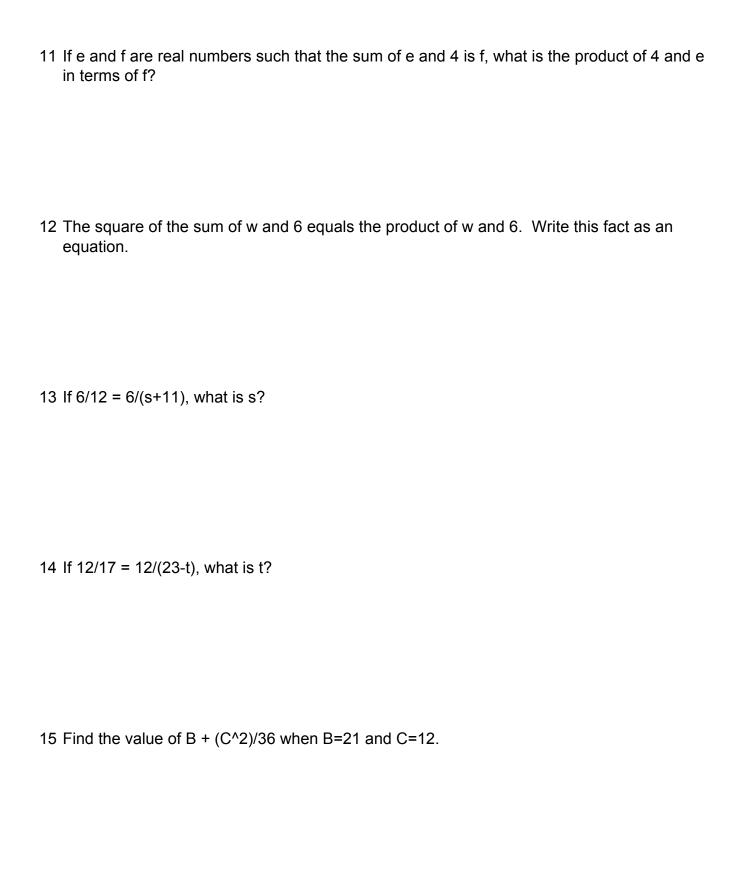
2 What is the value of -10p if 
$$p = 2q + 6$$
 and  $q = 2$ ?

3 What is the value of 5p if 
$$p = -7s - 7$$
 and  $s = 4$ ?

4 Let 
$$f(x) = x + 7$$
, and let  $g(x) = (x^2 - 49)/(x - 7)$ . What is the difference between these two functions?

5 We define a new operator, @, such that a @ b = a^b - b^a. What is 5 @ 5?





Please e-mail comments and suggestions to: edu@ezlink.com

1	ANSWER: 132. EXPLANATION: If $r = 4t$ and $t = 3$ , then we substitute 3 for t and find that $r = 4 \times 3$ , or 12. Since the question asks us to find the value of 11r, we simply multiply 11 by 12 to get the answer.
2	ANSWER: -100. EXPLANATION: If $p = 2q + 6$ and $q = 2$ , then we substitute 2 for q and find that $p = 2 \times 2 + 6$ , or 10. Since the question asks us to find the value of -10p, we simply multiply -10 by 10 to get the answer.
3	ANSWER: -175. EXPLANATION: If $p = -7s - 7$ and $s = 4$ , then we substitute 4 for s and find that $p = -7 \times 4 - 7$ , or -35. Since the question asks us to find the value of 5p, we simply multiply 5 by -35 to get the answer.
4	ANSWER: The functions are identical, other than $g(x)$ being undefined where $x=7$ 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.
5	ANSWER: 0. EXPLANATION: By the definition of the function, $5 @ 5 = 5^5 - 5^5$ . We know that $5^5=3125$ , and $5^5=3125$ . We then subtract to find the difference.

6 ANSWER: 64. EXPLANATION: In this case, the value of r does not matter. The difference between the exponents in the numerator (r+3) and the denominator (r-3) will always be 6. Therefore, when you divide the numerator by the denominator, your answer will be 2^6, regardless of the value of r.
7 ANSWER: True
8 ANSWER: False
9 ANSWER: $x \ge 13$ and $x \le -6$ . EXPLANATION: Add $x^2$ to both sides of the equation, and subtract 46 from both sides of the equation, and you get $0 \le x^2 - 7x - 78$ . Factor, and you get $0 \le (x - 13)(x + 6)$ . The right side of the equation equals 0 when $x = 13$ or $x = -6$ , and it is greater than 0 when $x \ge 13$ or $x \le -6$ .
10 ANSWER: 3. EXPLANATION: Begin by adding 5 to both sides of the equation, which yields 6x = 18. Then divide both sides by 6 to get x = 18/6. Finally, convert this improper fraction to the correct form, 3.

11	ANSWER: $4(f-4)$ . EXPLANATION: The problem asks for the product of 4 and e, which is obviously 4e. However, it asks for this sum in terms of f. Since we know that $4 + e = f$ , then $e = f-4$ , and we can use this equation to substitute for e to get the answer in terms of f
12	ANSWER: $(w + 6)^2 = 6w$ . EXPLANATION: The sum of w and 6 is simply $w + 6$ . 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 $w + 6^2$ , only the 6 would be squared. To finish, we simply write an equals sign (=), and then the product of w and 6, which is simply 6w.
13	ANSWER: 1. 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 s+11=12.
14	ANSWER: 6. 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 40-t=17.
15	ANSWER: 25. EXPLANATION: Notice that C (12) goes into the denominator of the fraction exactly 3 times. Therefore, the fraction reduces to 12/3. Add this to the value of B (21) to obtain the answer.