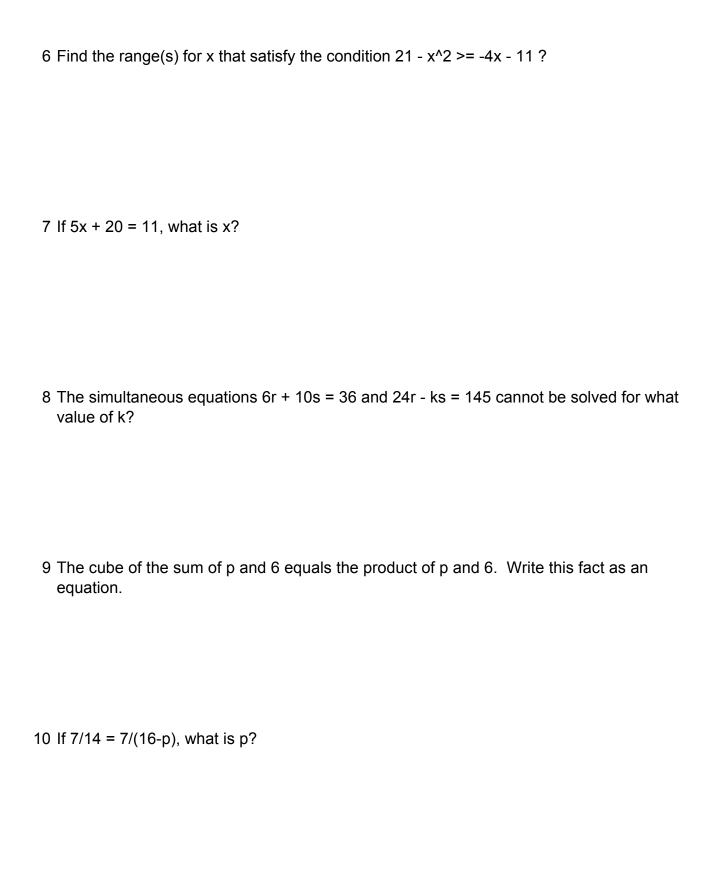


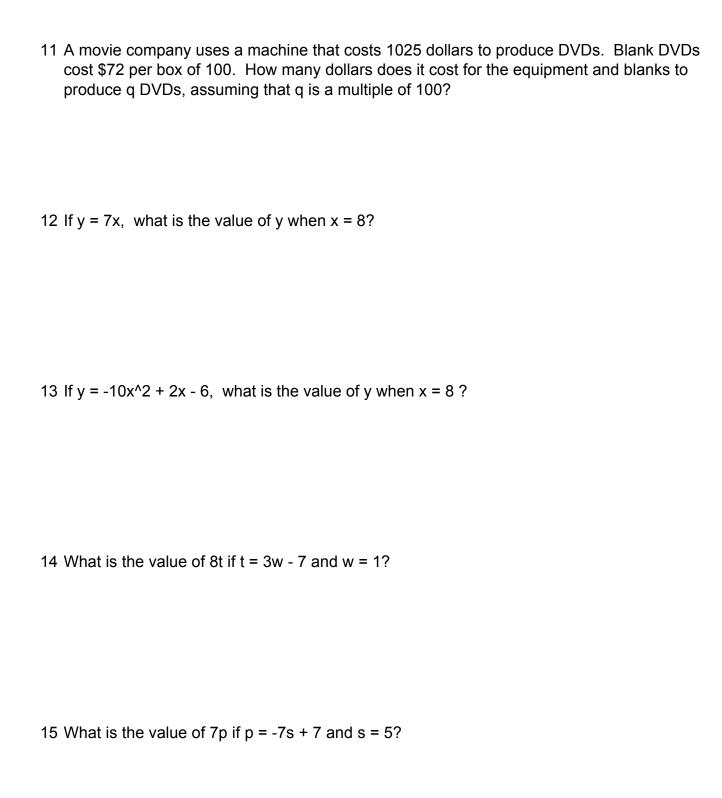
2 We define a new operator, @, such that a @
$$b = a^b \div b^a$$
. What is 5 @ 3?

$$3 (T/F): 3 = 3$$

$$4 (T/F): -1 = 0$$

5 (<, =, or >): Which symbol goes in the space to make the statement -1 ____ -7 true?





1	ANSWER: The functions are identical, other than $g(x)$ being undefined where $x=-8$ 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.
2	ANSWER: 125/243. EXPLANATION: By the definition of the function, 5 @ $3 = 5^3 \div 3^5$. We know that $5^3=125$, and $3^5=243$. We then divide to get the answer.
3	ANSWER: True. EXPLANATION: Since the numbers on both sides of the = symbol are the same, this is true.
4	ANSWER: False
5	ANSWER: >

6	ANSWER: $-4 \le x \le 8$. EXPLANATION: Add x^2 to both sides of the equation, and subtract 21 from both sides of the equation, and you get $0 \ge x^2 - 4x - 32$. Factor, and you get $0 \ge (x - 8)(x + 4)$. The right side of the equation equals 0 when $x = 8$ or $x = -4$, and it is less than 0 when $x \le 8$ but $x \ge -4$.
7	ANSWER: -1 4/5. EXPLANATION: Begin by subtracting 20 from both sides of the equation, which yields $5x = -9$. Then divide both sides by 5 to get $x = -9/5$.
8	ANSWER: -40. EXPLANATION: If $k = -40$, then the left side of the second equation is exactly 4 times the left side of the first equation. However, the right side of the second equation is not 4 times the right side of the first equation, so the two equations have no solution.
9	ANSWER: $(p + 6)^3 = 6p$. EXPLANATION: The sum of p and 6 is simply p + 6. To cube 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 p + 6 3 , only the 6 would be cubed. To finish, we simply write an equals sign (=), and then the product of p and 6, which is simply 6p.

10 ANSWER: 2. 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 16-p=14.

		1025 + 0.72q. EXPLANATION: The fixed cost is the cost of the equipment. ch additional DVD, we add 1/100th of the cost of a box of 100.
12 .	ANSWER:	56
13 .	ANSWER:	-630
1	find that t =	-32. EXPLANATION: If t = 3w - 7 and w = 1, then we substitute 1 for w and 3×1 - 7, or -4. Since the question asks us to find the value of 8t, we simply y -4 to get the answer.
1	find that p =	-196. EXPLANATION: If p = -7s + 7 and s = 5, then we substitute 5 for s and = -7×5 + 7, or -28. Since the question asks us to find the value of 7p, we simply y -28 to get the answer.