

Algebra II Homework #8

- 1) Five less than the quotient of a number and six is seven more than triple the number. Find the number.
- 2) Solve: $-3^2 - 2(4x - 5) - 12 \div 6(-1 - 1) - 3x = -8^0 - (5x - 2) - (-1 - 2)^2$
- 3) Find the equation of the line that goes through the points $(-9, 8)$ and $(-5, -4)$.
- 4) Find the distance between the points $(-3, 6)$ and $(-6, -1)$
- 5) Solve: $-2|x - 1| + 11 < 5$
- 6) On Monday, Patty bought 6 gallons of premium paint and 4 gallons of standard paint for a total cost of \$347. On Tuesday she bought 8 more gallons of the premium paint and 10 more gallons of the standard paint for a total cost of \$563. How much did she pay for a gallon of premium paint and how much for a gallon of standard?
- 7) Jason has \$5.19 in change consisting of pennies, nickels, and quarters. If the amount of nickels equals twice the sum of the quarters and pennies and he has 63 total coins, how many pennies, nickels, and quarters does Jason have?
- 8) Graph the solution set for the following system of inequalities:
$$3x - 2y > -8 \text{ and } 2x + 3y \geq -6$$
- 9) The difference of Rob's and Grace's ages is three less than twice Grace's age. If double the sum of their ages is five less than triple Rob's age, how old are Rob and Grace?
- 10) A movie theater sells adult tickets for \$12 per ticket, senior tickets for \$8 per ticket, and children tickets for \$5 per ticket. Last Saturday, it sold a total of 321 tickets and brought in a \$2,597 in gross receipts. If the sum of the senior and children tickets equals twice the adult tickets, how many of each kind of ticket were sold?
- 11) Graph the solution set for the following system of inequalities:
$$2x + 5y < 5 \text{ or } -5x - 3y < 9$$

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- 12) It takes an airplane 16 hours to fly a 4160 miles trip against the wind but it takes only 10 hours to make the return trip with the wind. If the airplane flies at a constant air speed on both trips and the wind remains constant, what is the speed of the airplane and what is the speed of the wind?
- 13) The sum of Mike's three test grades in algebra was 200. The difference of his grades on the third and first tests was eighty-two less than twice his grade on the middle test. If fifteen less than the sum of his first and second grades is three more than his last test grade, what grade did he earn on all three tests?
- 14) Graph the solution set for the following system of inequalities:

$$3x - y > 4 \text{ and } -6x + 2y > 6$$

- 15) Laura buys six pounds of peanut butter and four pounds of chocolate for a total cost of \$106. Later that day she returns to the store and buys ten more pounds of peanut butter and ten pounds of chocolate for a total cost of \$220. What did Laura pay for a pound of peanut butter and a pound of chocolate?
- 16) A fundraising bake sale consists of selling donuts, muffins, and brownies. Donuts sell for \$2, muffins sell for \$4, and brownies sell for \$3. A total of 185 items were sold for total revenue of \$548. If twice as many donuts were sold than eight less than the sum of the muffins and brownies, how many of each type of baked good was sold?
- 17) Graph the solution set for the following system of inequalities:

$$2x + 3y \geq -6 \text{ or } x - 4y > -4$$

- 18) Chris can paddle his canoe eight miles down river in two hours but it takes him four hours to paddle his canoe back up river to where he started. If he paddles his canoe at the same rate throughout both trips, how fast does Chris paddle and what is the current of the river?
- 19) Amy has a total of 45 coins in her purse consisting of pennies, dimes, and quarters. The value of the coins totals \$5.13. If sum of the number of quarters and dimes is nine less than twice the amount of pennies, how many quarters, dimes, and pennies does Amy have?
- 20) Graph the solution set for the following system of inequalities:

$$3x - y > -2 \text{ and } 3x - 4y \leq 4$$

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