Pre-Algebra Homework #11

1) If you roll both a fair, six-sided and an eight-sided die, what is the probability of rolling a sum of 6?

2) Graph and label each of the following points all on one graph and state the quadrant for each point:

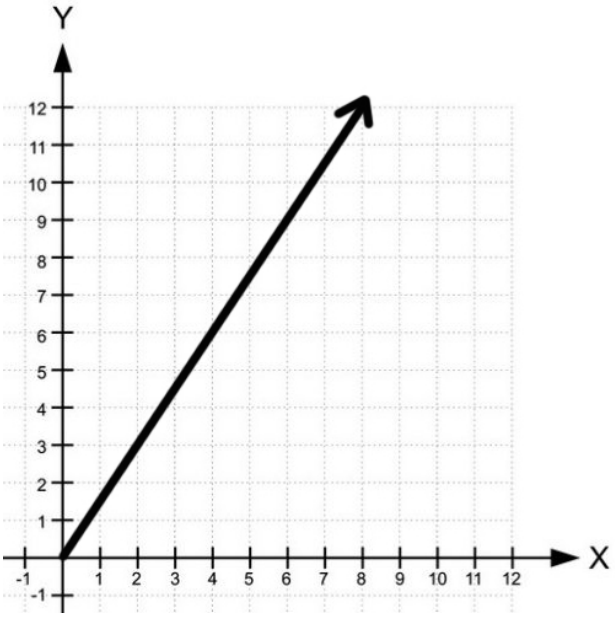
A. (–2, 5) B. (8, –5) C. (4, 0) D. (–7, –3) E. (1, –4)

3) If you roll both a fair eight-sided and ten-sided die, what is the probability that you will roll either a 3 or 6 on the eight-sided die and roll a 1, 2, or 3 on the ten-sided die?

4) Graph the equation $4x - y = 3$ by plotting points.

5) Graph the equation $3x + 6y = 12$ using the equation of a line, identify the constant of proportionality (the slope) from the equation, and show the constant of proportionality, or slope, on the graph

6) In the following graph, the *x*-axis represents the number of candy bars purchased while the *y*-axis represents how much money you have spent. The line on the graph represents the proportional equation $y = \frac{3}{2}x$. What is the constant of proportionality and describe the meaning of the point (6, 9).



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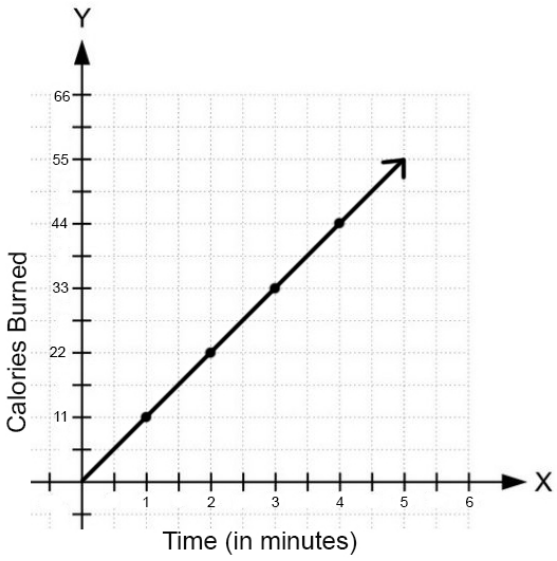
7) A trip from Wharton, NJ to Washington D.C costs $75 in gas and tolls. The toll fees add up to $4.50. The gas for a trip from Washington D.C to Orlando, FL costs 30% more, but there are no tolls. How much will the gas cost for a trip from Washington D.C to Orlando, FL?

8) At American Christian School, of the 30 girls who tried out for the basketball team, 12 were selected and of the 40 boys who tried out, 16 were selected. Are the ratios of number of students on the team to number of student trying out the same for both boys and girls? How do you know?

9) During Mike's physical education class today, students visited activity stations. Next to each station there was the graph on the right. Is the number of calories burned proportional to time? How do you know? If Mike jumped rope for 6.5 minutes, how many calories would he expect to burn?



10) Alex spent the summer helping out at his family's business. He was hoping to earn enough money to buy a new $220 gaming system by the end of the summer. Halfway through the summer, after working for 4 weeks, he had earned $112. Construct a table and fill in all values. If Alex continues to work and earn money at this rate, will he have enough money to buy the gaming system by the end of the summer? State the constant of proportionality.

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11) John is filling a bathtub that is 18 inches deep. He notices that it takes two minutes to fill the tub with three inches of water. He estimates it will take ten more minutes for the water to reach the top of the tub if it continues at the same rate. Is he correct? Construct a chart and explain your answer.

12) Jonathan's parents told him that for every 5 hours of homework or reading he completes, he will be able to play 3 hours of video games. His friend Lucas's parents told their son that he can play 30 minutes for every hour of homework or reading time he completes. If both boys spend the same amount of time on homework and reading this week, which boy gets more time playing video games and how do you know?

13) Caleb has to take his school uniform to the dry cleaners. The dry cleaning fee for 3 pairs of pants is $18. What is the constant of proportionality? How much will it cost Caleb if he dry-cleans all of his 11 pairs of pants?

14) Joseph earns $15 for every lawn he mows. Is the amount of money he earns proportional to the number of lawns he mows? Make a table to help you identify the type of relationship.

15) Wildlife conservationists are concerned that the deer population might not be constant across the National Forest. The scientists found that there were 144 deer in a 16 square mile area of the forest. In another part of the forest, conservationists counted 117 deer in a 13 square mile area. Yet a third conservationist counted 24 deer in a 216 square acre plot of the forest. Create a table and state the constant of proportionality.

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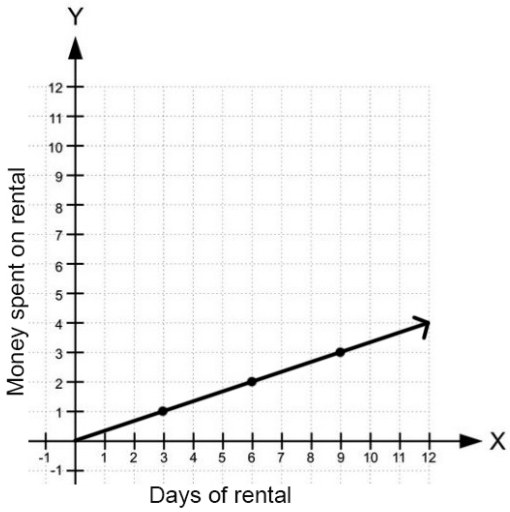
16) Kiwis cost $0.59 per pound. What is the constant of proportionality? How much would 26 pounds of kiwis cost?

17) Andrew spends 15 hours this week exercising, and 30% of that time was spent playing soccer. The following week, Andrew spends 20 hours exercising, and 35% of that time was spent playing soccer. What is the total amount of hours Andrew spends playing soccer during both weeks? During the next two weeks, Andrew spends a total of 40 hours exercise but the same amount of total time playing soccer. What percent of his exercise time did he spend playing soccer during the last two weeks?

18) In the following graph, the *x*-axis represents the number of days you have rented a movie while the *y*-axis represents how much money you have spent. The line on the graph represents the proportional equation $y = \frac{1}{3}x$.



What is the constant of proportionality and describe the meaning of the point (9, 3). How much would you pay to rent a movie for 24 days?

19) At the end of the summer, Caitlin had saved $120 from her summer job. This was her initial deposit into a new savings account at the bank. As the school year starts, Caitlin is going to deposit another $5 each week from her allowance. Is her account balance proportional to the number of weeks of deposits? Create a table and explain your answer.

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20) You, and your three siblings, inherit money from both your grandmother and grandfather when they die. You grandfather's estate is worth $60,000 and he leaves you, and your siblings, a total of 65% of his estate. Your grandmother's estate is worth $85,000 and she leaves you, and your siblings, a total of 55% of her estate. How much total money will you receive from both estates combined?