

1. The findings from a recent analysis of rental housing costs are given in the table. How much more expensive is the cheapest monthly rental cost for a 3 Bedroom in the District of Columbia than the cheapest monthly rental cost for a 3 Bedroom in the Maryland/Virginia suburbs?

1. \$ _____

Monthly Rental Costs

	District of Columbia	Maryland/Virginia Suburbs
Efficiency	\$700 to 950	\$600 to 950
1 Bedroom	\$700 to 1,500	\$650 to 1,500
2 Bedroom	\$900 to 1,800	\$850 to 1,800
3 Bedroom	\$1,200 to 2,000	\$1,000 to 2,000

2. Five couples were at a party. If each person shook hands exactly once with everyone else except his/her spouse, how many handshakes were exchanged? (Note: One obviously doesn't shake hands with oneself.)



2. _____ handshakes

3. The product of two consecutive negative integers is 2550.
What is the sum of the two integers?

3. _____

4. What is the positive difference between the sum of the first
20 positive multiples of 5 and the sum of the first
20 positive, even integers?

4. _____

5. Given that $-3 \leq x \leq 2$ and $20x^2 = y - 24$, what is the smallest possible value for y ?

5. _____

6. An ammonia and water mixture fills a five-gallon container. Eighty percent of the mixture is ammonia but some of the mixture will be drained and replaced with pure water. If a five-gallon mixture of fifty percent ammonia is desired, how many quarts of the mixture need to be drained before the water is added? (A quart is one-fourth of a gallon.) Express your answer as a decimal to the nearest tenth.

6. _____ quarts



7. Given points $P(-2, 7)$ and $Q(4, y)$ in a coordinate plane, for what value of y is the slope of the line through P and Q equal to $\frac{-3}{2}$?

7. _____

8. Pirate Pete shares his treasure with Pirate Paul in an interesting way. Pete first says, "One for me, one for you," giving himself one coin and starting Paul's pile with one coin. Then Pete says, "Two for me, and two for you," giving himself two more coins but making Paul's pile two coins in total. Next Pete says, "Three for me, three for you" while giving himself three more coins and making Paul's pile three coins in total. This pattern continues until Pete gives himself x more coins but makes Paul's pile x coins in total. At this point all of the coins have been distributed, and Pirate Pete has exactly four times as many coins as Pirate Paul. How many gold coins do they have in total?

8. _____ gold coins

