PLEASE HELP SOLVE THE FOLLOWING QUESTIONS

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|  | **1.** Elsie is making a quilt using quilt blocks like the one in the diagram. a. How many lines of symmetry are there? *Type your answer below.*b. Does the quilt square have rotational symmetry? If so, what is the angle of rotation? *Type your answers below.* |
|  | **2.** Solve by simulating the problem. You have a 5-question multiple-choice test. Each question has four choices. You don’t know any of the answers. What is the experimental probability that you will guess exactly three out of five questions correctly? *Type your answer below using complete sentences.* |
|  | **3.** Use the diagram below to answer the following questions. *Type your answers below each question.* a. Name three points.b. Name four different segments.c. Write two other names for  $\overleftrightarrow{FG}$.d. Name three different rays. |
|  | **4.** Charlie is at a small airfield watching for the approach of a small plane with engine trouble. He sees the plane at an angle of elevation of 32. At the same time, the pilot radios Charlie and reports the plane’s altitude is 1,700 feet. Charlie’s eyes are 5.2 feet from the ground. Draw a sketch of this situation (you do not need to submit the sketch). Find the ground distance from Charlie to the plane. *Type your answer below. Explain your work.*      |
|  | **\_\_\_\_\_ 5.** Jason and Kyle both choose a number from 1 to 10 at random. What is the probability that both numbers are odd? *Type your answer in the blank to the left.*

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| A. | $$\frac{1}{3}$$ |
| B. | $$\frac{1}{2}$$ |
| C. | $$\frac{1}{4}$$ |
| D. | $$\frac{1}{8}$$ |

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|  | **6.** Identify the number as rational or irrational. Explain. *Type your answers below.*-$\sqrt{127}$ |
|  | **7.** Jeremy is building a large deck for a community center. The deck is shaped as a rectangle. The width of the deck is 29 feet. The perimeter of the deck is to be at least 134 feet. a. Write an inequality that represents all possible values for the length of the deck. b. Find all possible values for the length of the deck. |
|  | **8.** Caitlin had $402 in her bank account. She withdrew $15 each week to pay for a swimming lesson. She now has $237.a.    Write an equation that can be used to find the number of swimming lessons that she paid for.    b.    How many swimming lessons did she pay for?    c.    At the time she had $237, the cost of a lesson rose to $19. How many lessons can she pay for with her remaining $237? |
|  | **9.** Is a triangle with sides of length 6 ft., 21 ft., 23 ft. a right triangle? Explain. |
|  | **10.** Identify the number as rational or irrational. Explain. 291.87 |
|  | **11.** Is the sequence 5, 9, 15, ... an arithmetic sequence? Explain. *Type your answer below.* |
|  | **12.** Suppose a computer virus begins by infecting 8 computers in the first hour after it is released. Each hour after that, each newly infected computer causes 8 more computers to become infected. The function y = 8x models this situation. Make a table with integer values of x from 1 to 4 in the space below. |
|  | **13.** For the function $y=1^{x}$, make a table with integer values of *x* from 0 to 4. Then graph the function (you do not need to submit the graph). Does the graph of show exponential growth, exponential decay, or neither? Explain your thinking. |
|  | **\_\_\_\_\_ 14.** Tell whether the sequence $\frac{1}{3}, 0, 1, -2…$ is arithmetic, geometric, or neither. Find the next three terms of the sequence. *Type your answer in the blank to the left.*

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| A. neither; 7, -20, 61  |  |
| B. geometric;7, -20, 61  |  |
| C. arithmetic; $-\frac{1}{3}, 1\frac{1}{3}, 3$  |  |
| D. geometric;$-3\frac{1}{3}, -5\frac{5}{9}, -9\frac{7}{27}$ |  |

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|  | **15.** Is the sequence 3, 12, 36, ... a geometric sequence? Explain. *Type your answer below.* |
|  | **\_\_\_\_\_ 16.** Graph the relation in the table. Then use the vertical-line test. Is the relation a function? *Type your answer in the blank to the left.*

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| ***x*** | ***y*** |
| –3 | –4 |
| 0 | 5 |
| 1 | –5 |
| 3 | 1 |

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| A. The relation is not a function. |  |  | B. The relation is not a function. |
| C. The relation is a function. |  |  | D. The relation is a function. |

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|  | **17.** A building lot in a city is shaped as a 30° -60° -90° triangle. The side opposite the 30° angle measures 41 feet. a. Find the length of the side of the lot opposite the 60° angle. b. Find the length of the hypotenuse of the triangular lot. c. Find the sine, cosine, and tangent of the 30° angle in the lot. Write your answers as decimals rounded to four decimal places. |
|  | **\_\_\_\_\_ 18.** The scatter plot shows the study times and test scores for a number of students. How long did the person who scored 81 study? *Type your answer in the blank to the left.*

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| A. 50 minutes |  |
| B. 81 minutes |  |
| C. 16 minutes |  |
| D. 100 minutes |  |

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|  | **19.** If you know the number of yards for a measurement, you can change that measure to meters by multiplying the number of yards by 0.9144.a. Write a function rule that relates meters to yards.b. How many meters are equivalent to 7,200 yards? Round your answer to the nearest hundredth, if necessary.c. How many yards are equivalent to 2,500 meters? Round your answer to the nearest hundredth, if necessary. |
|  | **\_\_\_\_\_ 20.** Brandon needs $480 to buy a TV and stereo system for his room. He received $60 in cash for birthday presents. He plans to save $30 per week from his part-time job. To find how many weeks w it will take to have $480, solve 60 + 30w = 480. *Type your answer in the blank to the left.*

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| A. 16 weeks |  |
| B. 13 weeks |  |
| C. 15 weeks |  |
| D. 14 weeks |  |

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