

Do all work on the separate sheets provided; be sure to do all parts of all questions. Any decimal answers may be rounded to the nearest hundredth (two decimal places).

1. Use your calculator for the following; you do not need to show work.

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|--|-------------------------------------|--|
| (a) $32.5 - 6.77 =$ | (d) What is 24% of 433? | (g) Express $\frac{3}{400}$ as a percent. |
| (b) $4\frac{3}{7} \div 5\frac{16}{17} =$ | (e) Write 32.6% as a decimal. | (h) Change $3\frac{44}{55}$ to an improper fraction. |
| (c) $\frac{33}{5} - 2\frac{1}{7} =$ | (f) 18 is <i>what</i> percent of 4? | |

2. Arrange the set of fractions in increasing order. Show your work, explaining which method you chose to determine the correct order. $\{\frac{44}{55}, \frac{1}{3}, \frac{11}{14}\}$

3. After a chef's tasting, the 74 guests were polled about their favorite menu items. Draw a circle graph to represent the data shown; be sure to label each wedge of the circle with the number of guests, not the percentage.

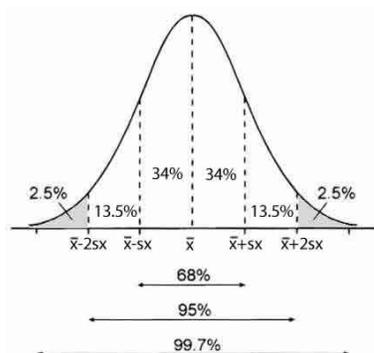
number	menu item chosen
29	foie gras
20	pork belly
16	roasted eggplant
6	seared halibut
3	ceviche

4. Find the (a) mean, (b) median, (c) mode, (d) standard deviation, and (e) percent uncertainty, for the following set of test scores.

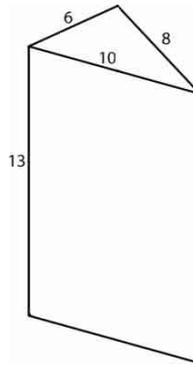
75, 78, 66, 99, 78, 67, 88, 87, 99, 100, 88, 89, 85, 84, 86, 88

5. Professor Berg did a field study to measure the shell width of a certain species of snail. She and her team measured thousands of snails, and found the shell width to be approximately normally distributed, with mean width 7 millimeters, and standard deviation .5 millimeter. Use the normal distribution chart to help you answer the questions below.

- | | | |
|---|--|---|
| (a) What percentage of the snails had a shell which was between 6 and 8 millimeters wide? | (b) What percentage of the snails had shells wider than 7 millimeters? | (c) What percentage of the snails had shells smaller than 6.5 millimeters wide? |
|---|--|---|



6. Michael hates going to his grandmothers' houses. His grandma Claire has 33 cats, and to care for them, she spends \$200 per week on supplies. His other grandma Rose has 26 cats, and spends \$150 per week on their care. Which of the grandparents spends more money per cat?
7. Sketch a triangle with side lengths 3, 4, and 5 centimeters. Draw the triangle on your answer sheet, and then measure and label each of the angles.
8. You have rolled out a thin circular piece of dough to make cookies. The radius of your dough is 8 inches. You then cut out ten circular cookies, each with radius 1 inch. What is the area of the remaining dough on your counter? *Hint:* Draw a picture to help you.
9. In the triangular prism below, both of the bases are right triangles. Find its surface area and volume.



10. Suppose two distributions are given, with the following properties:

	Dist. I	Dist. II
minimum	45	30
first quartile	48	38
median	50	50
third quartile	52	70
maximum	60	95

Which of these distributions do you expect has a higher standard deviation, and which do you expect has a higher percent uncertainty? *Hint:* You may want to draw a box diagram to help you visualize the data first. Explain your answer; guesses with no explanation will receive zero credit.

11. Solve the following equations by any means you like, including algebraic manipulation or by graphing. Show all work, including a picture of the graph if necessary. Make sure to look for *all* possible solutions, and to *check* each answer you get. If there is no solution, write **no solution**.

(a) $3x - 7 = 2x + 1$

(b) $x^2 + 4x + 4 = 0$

(c) $x^2 + 10 = 9$