

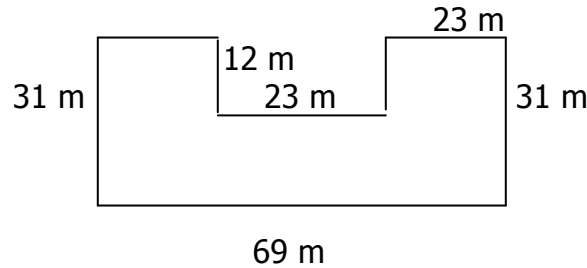
2010 Middle School Math Festival**Team Round: Teams 1, 2, and 3**

Unless stated in the problem, answers will be written as an integer or an exact decimal (i.e. do not round). Any problems requiring a common fraction or mixed number for the answer will always require the fractional part to be in lowest terms.

1. Suzanne needs material for a school project. She buys 2.45 yards of material at \$4.84 per yard. Let A = the total cost, rounded to the nearest cent. Pork chops cost \$3.30 per pound and Mary buys 4.4 pounds. Let B = cost. Calculate $A + B$.
2. $C = \frac{1}{9} + \frac{1}{12}$ and $D = \frac{4}{9} - \frac{1}{3}$.
Calculate $C \div D$. Write the answer as a common fraction.
3. You are making scarves for presents. Each scarf needs $\frac{2}{3}$ yards of fabric. Let E = the number of yards of fabric needed to make 6 scarves. Let F = the product of $\frac{3}{14}$ and $\frac{10}{9}$. Calculate the positive difference of E and F .
Write the answer as a common fraction.
4. A deep-sea diver must descend and ascend in short steps to equalize the pressure on his body. If the diver rises towards the surface too fast, he may suffer from a physical condition called "the bends." Suppose a diver started at 82 feet below the water's surface and rose in five steps of 15 feet each. Let G = the integer which describes the diver's new position in relation to the surface of the water. Let $H = -16 + 20 - (-5) + 8$. Calculate GH .
5. A scale model of the Golden Gate Bridge in San Francisco has a main spar that is 284 centimeters long. The scale of the model is 1 cm : 15 ft. Let J = the length of the actual main span, measured in feet. Let $K = 70\%$ of 34. Calculate JK .
6. From nose to tail, Dog #1 is 5 feet long. Dog #1 is $\frac{4}{5}$ the length of Dog #2. Let L = the length of Dog #2, in feet. You are visiting a friend in another state and you are driving at 55 mph. Your friend lives 440 miles away and you have already driven 275 miles. Let M = how many more hours it will take to reach your destination. Calculate $M \div L$. Write the answer as a common fraction.
7. An angle measures 34.73° . Calculate the sum of the angle's complement and supplement.

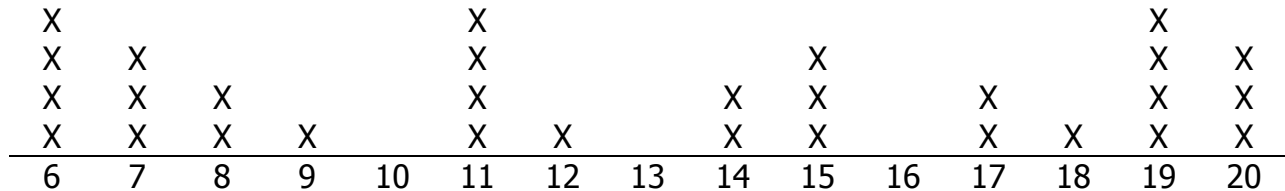
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8. Find the positive difference between the area and perimeter of the figure. All angles are 90° . Figure is NOT drawn to scale.



9. The line plot below represents the number of letters written to overseas pen pals by students at Waverly Middle School. Each X represents 12 students. Let P = the number of students who wrote more than 7 and fewer than 19 letters. Let Q = the total number of students who wrote letters. Calculate $\frac{P}{Q}$. Write the answer as a common fraction.

Letters to Overseas Pen Pals



10. A standard number cube is rolled 228 times. Let R = the numbers of times you would expect the number 3 or the number 5 to be the result. A drawer contains 2 red socks, 3 white socks, and 3 blue socks. Without looking, you choose one sock, return it, and then choose again. Let S = the probability that the first sock is blue and the second sock is red. Calculate RS . Write the answer as a mixed number.