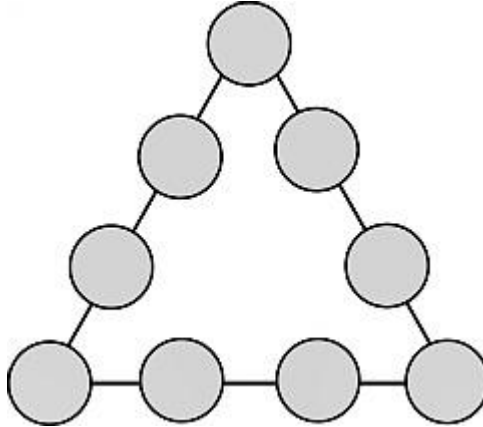**Instructions**: Show all work. Partial credit can only be given where work is shown. Be sure to answer all parts of each question. You may not use a calculator on this quiz.

1. Arrange the numbers 1-9 in the triangle so that each side of 4 numbers adds up to 20.

2. Find reasonable answers to the missing terms in the sequences shown. Justify your answers and show that your scheme works for the given sequence values.

    a. $1, 3, 4, 7, 11,$ _____, _____, _____

    b. $0, 1, 4, 12, 29,$ _____, _____, _____

3. Solve the arithmagon. What factors must go in the vertices of the triangle so that the two numbers at the end of each side multiplies to the number shown on the side?