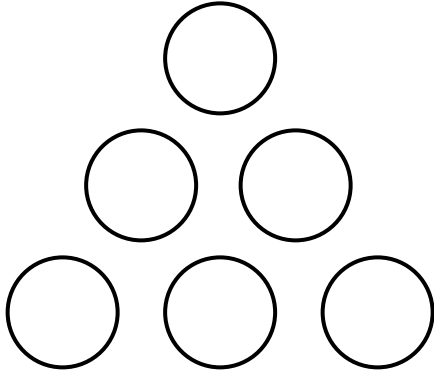


Math 2010, Problem Set #1

Name:

Due: Wednesday, June 1st. *Show all work for partial credit!*

1. Place the digits 1, 2, 3, 4, 5, and 6 in the circles below so that the sum of the three numbers on each side of the triangle is 12.



2. Determine how many different numbers can be formed using all five digits in the number 44,346. *List out all the different possibilities.*

3. Pascal's triangle is illustrated below. Using 1's on the outside, the values in each successive row are computed by adding the two numbers above each position. For instance, in row $n = 4$, the 6 is found by adding 3 and 3 above it.

$$\begin{array}{rcccccc} n = 0 & & & & & & 1 \\ n = 1 & & & & & 1 & 1 \\ n = 2 & & & & 1 & 2 & 1 \\ n = 3 & & & 1 & 3 & 3 & 1 \\ n = 4 & & 1 & 4 & 6 & 4 & 1 \\ n = 5 & 1 & 5 & 10 & 10 & 5 & 1 \end{array}$$

- (a) Write out the numbers that will appear in the next row of Pascal's triangle ($n = 6$).
- (b) Compute the sum of the numbers in each row, and look for a pattern to find a formula for the sum based on the row number n .
4. Use the symbols $+$, $-$, \times , and \div to fill in the following blanks to make both statements true. You may use each symbol more than once, and parentheses may be necessary.
- (a) $5 ___ 5 ___ 5 ___ 5 = 24$
- (b) $5 ___ 5 ___ 5 ___ 5 = 30$
5. Peter and Jill each worked a different number of days, but earned the same amount of money. Suppose Peter earned \$20 a day, Jill earned \$30 a day, and Peter worked five more days than Jill. How many days did each of them work?