Monday, Week 1

1. Discuss with your neighbor: which of the following statements strike you as true?

   (a) Ducks lay eggs.

   (b) Mammals lay eggs.

   (c) Mosquitoes carry the West Nile Virus.

   (d) Canadians are right-handed.

2. Fill in the following truth table:

a	b	$a = b$	$a = -b$	$a = \pm b$
1	2			
3	3			
−1	1			
0	0			

3. What does $\cos(3 \pm 1) = \cos(3)\cos(1) \mp \sin(3)\sin(1)$ mean?

4. Which of these statments mean the same thing?

   (a) If it is raining then I am happy.

   (b) If I am happy then it is raining.

   (c) If it is not raining then I am not happy.

   (d) If I am not happy then it is not raining.

5. How can you tell when a number is divisible by 25?

6. Write the truth table for "p and (q or r)" and "(p and q) or r". Come up with an English sentence that illustrates the difference between the two.