MATH-CCTH 1080H – Mathematics for Everyday Life

Trent University, Winter 2018 in Peterborough

Test #1

~~Tuesday, 6~~ Friday, 9 February

Time: 60 minutes

Instructions

- *Show all your work.* Legibly, please!
- *If you have a question, ask it!*
- Use the back sides of the test sheets for rough work or extra space.
- You may use a calculator and an aid sheet.

1. Do any *two (2)* of **a**–**c**. *[10 = 2 × 5 each]*

a. If a *galleon* is 17 *sickles* and a *sickle* is 29 *knuts*, how many *galleons* do 1479 *knuts* amount to?

b. Fill in the blanks: *i.* 7 is to 6 as __ is to 42.   *ii.* __ is to 6 as 35 is to 15.
iii. 5 is to __ as 48 is to 40.   *iv.* 17 is to 4.25 as 3.6 is to __.
v. __ is to 4 as 16 is to __. [Same number in both blanks!]

c. What is the speed in metres per second of a car moving at 90 kilometres per hour?

2. Do any *two (2)* of **a**–**c**. *[10 = 2 × 5 each]*

a. Three cards are selected, one at a time and without replacing any before the next is chosen, from a standard deck. What is the probability that the three chosen cards do not include any ♢s?

b. A committee requires a chair and two ordinary members. How many ways are there to pick these from a group of five individuals?

c. A fair coin is tossed, and then tossed some more until it comes up differently from how it came up on the first toss. What is the probability that this requires no more than four tosses?

3. Do *one (1)* of **a** or **b**. *[10]*

a. A tree was 90 *cm* tall when it was transplanted into a yard; from then on it grew an equal amount each year. At the end of its seventh year in the yard it was one ninth taller than it was at the end of the sixth year. How tall was the tree at the end of its twelfth year in the yard?

b. A very special island is inhabited only by knights and knaves. Knights always tell the truth, and knaves always lie. You meet two inhabitants: Zed and Peggy. Zed says that Peggy is a knave. Peggy tells you, "Either Zed is a knight or I am a knight." Determine who is a knight and who is a knave. Please give your reasoning.

[Total = 30]