MTH-2010, FALL 2014
DR. GRAHAM-SQUIRE

TEST 3 REVIEW KEY

For the following problems, I either put the answer in or refer you to the video answer (in case I cannot do it justice with just a simple answer).

- Section 6.4: (7) 6 2/3 loads
    (14) See video.
- Section 6.5: (7) 3/10 of a room
    (11) (a) 67.5 minutes
  (b) 8/9 of the lawn
- Section 6.6: (4) see video.
    (12) (a) 8 5/8 kg
  (b) 8 cups, then 1/2 cup, then 2 Tablespoons

- Section 7.1: (5) The first box is a better buy.
    (8) (a) they are all wrong
  (b) The first mixture is more yellow than the second, because it has a higher percentage (62.5) yellow than the second mixture (60 percent).
- Section 7.2: (3) 27 emperor penguins
    (13) 1.04 liters
    (19) see video
- Section 7.3: (8) You get 3 1/3 truckloads per acre, so a total of 11 2/3 truckloads per 3.5 acres.
- Section 7.4: (6) No, that proportion is wrong because you should be comparing areas. Should be (3.5/100)=(x/225)
    (12) 6 minutes
- Section 7.5: (5) Bob's method is not correct, he took 25 percent of the new price instead of the old. Correct answer is 2000.
    (9) (a) (c) and (d) are all the same, 53% of old price
  (b) is 153% of old price, and (e) is 53% of new price.
    (24) see video.

- Section 8.1: (7) (a) If B is a factor of A, then all of B's factors are also factors of A. So if $A = B \times k$, and $B = m \times n$, then n and m are factors of B. Substituting in for B, we have $A = m \times n \times k$, so m and n are also factors of A.
  (b) If A is a multiple of B, then all of A's multiples are also multiples of B.

- Section 8.2: (7) You will always get an odd number. Since the even number can be put in pairs, doing it three times you will still be able to make pairs. Adding one means there is one left over, so it is odd.
- Section 8.3: (9) see video

  (15) (a) Never. Since you will add an even and an odd number, the result will always be odd.

  (b) Always. $x + (x + 1) + (x + 2) = 3x + 3 = 3(x + 1)$ is always divisible by three.

  (c) Never. You will always have a remainder of 2.

  (d) Always. (e) For odd N it will always be true, for even N it will never be true.
- Section 8.4: (5) Because 19×23 is divisible by 19, if you try to divide $19 \cdot 23 + 1$ by 19, you will get a remainder of 1, and 19 does not divide into 1. Same argument goes for 23.
- Section 8.5: (13) see video.

  (21) see video
- Section 8.6: (4)(a) see video

  (11) (a) Could be either, no way to tell just from the display.

  (b) Could be $0.\overline{23}$ or $0.\overline{232323232}$

  (c) $0.23232323201001000100001\ldots$
- Section 8.7: (1) The calculation 3-7 uses only whole numbers, but has an answer that is a negative integer. Similarly, the calculation 3÷7 uses only whole numbers but has an answer that is not a whole number (it is a fraction).