*The Activity*



**Part I:** You’re a doctor, and you treat monsters. Not just any boring old monsters, but *mathematical* monsters. They are incredibly scary. Pictures from some of their patient files are on the right. Terrifying, right?! The wonderfully odd thing about these monsters that make them *mathematical* monsters is that they can’t help but eat numbers, but they are allergic to them. (Argh!) So after they digest the numbers, they throw them up, and they are a *different* number. The numbers alter themselves in the digestion process. Grossity! The neat thing about this is that you -- the monster doctor -- have discovered that the numbers change in predictable ways.

The monsters are freaked out about their allergy. However once they understand exactly how their allergy works, they tend to freak out less and feel better about it. So your practice has started thriving as you make it a point to help monsters understand their allergy.

Case File #1: Jellybean has been hungry, and ate and threw up the following numbers:

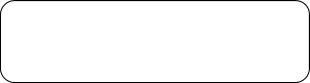
Ate: 5 Threw up: 8

Ate: 7 Threw up: 10

Ate: -3 Threw up: 0

Ate: 11 Threw Up: 14

Now Jellybean came to you, having eaten 23,399 (the price of a car from the newspaper) and you tell him that he’s going to be okay, and he should expect to throw up: \_\_\_\_\_\_\_\_\_. The reason you know this is because:



The case files that have piled up on your desk are below. Help out the little mathematical monsters!

Case File #2: Summer (2x-3)



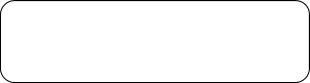
Ate: 5 Threw up: 7

Ate: 2 Threw up: 1

Ate: 4 Threw up: 5

Ate: -3 Threw up: -9

Now Summer tells you she’s eaten 0 and you tell her that she’s going to be okay, and she should expect to throw up: \_\_\_\_\_\_\_\_\_\_. The reason you know this is because:



Case File #3: Paula



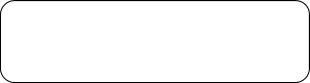
Ate: 2 Threw up: 16

Ate: ½ Threw up: 2

Ate: -3 Threw up: 1/64

Ate: 5 Threw up: 1024

Now Paula tells you she’s eaten -3/2 (she’s a very negative monster) and you tell her that she’s going to be okay, and she should expect to throw up: \_\_\_\_\_\_\_\_\_\_. The reason you know this is because:



Case File #4: Lisa



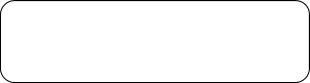
Ate: 0 Threw up: ½

Ate: 60 Threw up: ¼

Ate: -60 Threw up: ¼

Ate: 90 Threw up: 0

Now Lisa informs you that her latest meal is 120 (which happens to be her weight) and you tell her that she’s going to be right as rain soon and she should expect to throw up: \_\_\_\_\_\_\_\_\_\_\_\_. The reason you know this is because:



Case File #5: Alex



Ate: 180 Threw up: -4

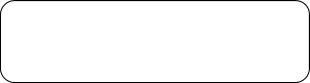
Ate: -45 Threw up: -5

Ate: 90 Threw up: undefined

Ate: 0 Threw up: -4

Now Alex is full of anxiety because he ate 405 (Oklahoma area codes are considered a

delicacy among monsters) and you tell him that he will be golden and should expect to throw up: \_\_\_\_\_\_\_\_. The reason you know this is because:

  
  
Case File #6: Sheri

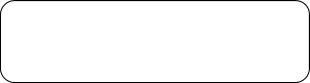


Ate: 1 Threw up: 90

Ate: -1 Threw up: -90

Ate: ½ Threw up: 30

Now Sheri is scared because she ate sqrt(2)/2 (the square root is good for her complexion) and you inform her that she will be fine and should expect to throw up: \_\_\_\_\_\_\_\_\_\_\_\_. The reason you know this is because:



**Challenging** Case File: Andrew



Ate: 2 Threw up: 10

Ate: -1 Threw up: 4

Ate: 0 Threw up: 0

Ate: -2 Threw up: 14

Ate: 1 Threw up: 2

Andrew has told you he last ingested 5 (he’s jealous of how many fingers humans have) and you tell him that he will be fine and should expect to throw up: \_\_\_\_\_\_\_\_\_. The reason you know this is because:

