1) 



2) **51,072**

****

3) 



4) **144**

****

5) 



6) **56**

****

7) 



8) **1536π**



9) **-108, -72, -48**

 x + y + z = -228 --> x + y + z = -228

2x = 3y --> 2x - 3y = 0

 2y = 3z --> 2y - 3z = 0

Solve to get x = -108, y = -72, and z = -48

10) **The sum of their weights (or C + K)**

Let C = Chase’s weight and K = Ken’s weight



11) 

P(at least 2) =



12) **-4**

Vertex is at (3, 4)



13) **900**

Lisbon logL=9 --> L = 109

Haiti logH=7 --> H = 107



Cici’s train : x2 – 14x + 49 + y2 – 6y + 9 = 56

 (x – 7)2 + (y – 3)2 = 56

 Makes a concentric circle with Joyce’s train.

 No points of intersection.

y = -2x + 15

By substitution : -2x + 15 = -2x2 + 8x + 27

 2x2 – 10x – 12 = 0

 x2 – 5x – 6 = 0

 (x – 6)(x + 1) = 0

 x = 6, x = -1 (reject)

 y = -12 + 15 = 3

I = 6 + 3 = 9

0 + 100 • 9 = 900

14) ****

(3x)log3 = (5x)log5

log[(3x)log3] = log[(5x)log5]

(log3)(log3x) = (log5)(log(5x)

(log3)(log3 + logx) = (log5)(log5 + logx)

(log3)2 + (log3logx) = (log5)2 + (log5logx)

(log3logx) – (log5logx) = (log5)2 – (log3)2

logx(log3 – log5) = (log5 – log3)(log5 + log3)

logx = [(log5 – log3)(log5 + log3)] / (log3 – log5)

logx = [(log5 – log3)(log5 + log3)] / -(log5 – log3)

logx = -(log5 + log3)

logx = -log15

logx = log15-1

x = 15-1 = 