Answers

**Algebra**

**Unit 3 Line Master 12e**

**Part 1**

4. Answers will vary. Sample answers:

a) I got 5005 heads and 4995 tails.

b) The experimental probability of tossing heads was ,   
 or 0.5005.

c) I think the more coin tosses the program does, the closer the   
 experimental probability will get to the theoretical probability.

d) My prediction was correct.  
 For 100 000 repeats, the program output 49 915 heads   
 and 50 085 tails.  
 So, the experimental probability of heads is 0.49915,   
 which is 0.000 85 less than 0.5. This is closer than my result   
 in part b), which was 0.005 greater than the experimental   
 probability.

**Part 2**

5. b) Answers will vary. For some students the experimental   
 probability will be closer than their result for 100 000 tosses   
 in Part 1, but for others, it may not be.  
 Sample answer:  
 When I did 1 000 000 repeats, the program output 499 909   
 heads and 500 091 tails. The experimental probability of   
 heads is 0.499 909. I expected that it would be really close   
 to 0.5 and it is.

Answers (cont’d)

**Algebra**

**Unit 3 Line Master 12f**

**Additional Challenge:**

Sample code and output:

Diagram

Description automatically generated

Graphical user interface, text, application, chat or text message

Description automatically generated