Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Investigation 13: **What Is the Expected Cost to Raise a Child?**

**Exit Ticket**

A mobile phone company offers an optional protection that a customer can choose that will pay for repairs if the phone is damaged in an accident. The plan cost $50. The retailer has determined that the typical cost to repair a broken phone is $150. Let R be the number of repairs a randomly chosen customer will use under this plan. Following is the probability distribution for R.

|  |  |
| --- | --- |
| **R** | **P(R)** |
| 0 | 0.80 |
| 1 | 0.17 |
| 2 | 0.02 |
| 3 | 0.01 |

1. What is the expected value of R, the number of repairs needed by a randomly selected customer?
2. Let C represent the amount it will cost the phone company in repairs for a randomly selected customer. Find the expected value of C.
3. What is the expected amount of profit the company will make from a randomly selected customer?