

F/T: Experimental Probability

Use the trial results to find each relative frequency.



Name _____

Date _____

Show your method

Relative frequency (experimental probability) = favourable trials $\div$ total trials. Only use the trial totals given – 30 or 1000 in every question.

Worked example

A coin was flipped 30 times, shown in the table. Find the relative frequency of Heads.

Coin	Heads	Tails
Flips	16	14

Favourable trials: 16

Total trials: 30

$$\text{Relative frequency} = \frac{16}{30} = \frac{8}{15}$$

1. Find the relative frequency of rolling a six.

Die	Six	Not Six
Rolls	4	26

2. 1000 items were tested. Find the experimental probability an item is faulty, as a decimal.

Item	Faulty	OK
Tested	18	982

3. A spinner was spun 30 times and landed on blue 9 times. Find the relative frequency of blue.

4. A survey of 1000 people found 430 prefer summer over winter. Find the experimental probability a person prefers summer, as a decimal.

5. A coin flipped 30 times gave 13 Heads. Find the relative frequency of Tails.

6. Out of 30 seeds planted, 25 germinated. Find the experimental probability that a seed germinates.

7. Out of 1000 lightbulbs tested, 12 were faulty. Find the experimental probability a bulb is faulty, as a decimal.

8. A basketball player scored on 21 of 30 attempts. Find the experimental probability of scoring.

9. Using the rate in Q8, predict how many scores out of 1000 attempts.

F/T: Experimental Probability (continued)

Compare, predict, and combine relative frequencies.



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10. A die is rolled 1000 times, landing on 6 a total of 172 times. Find the experimental probability of rolling a 6, as a decimal.

11. Compare your answer to Q10 with the theoretical probability of $\frac{1}{6} \approx 0.167$. Are they close?

12. In 1000 trials, an event's experimental probability was 0.245. How many times did the event occur?

13. In 30 trials, the relative frequency of an event was 0.4. How many times did the event occur?

14. A factory tests 1000 parts and finds 25 faulty. Predict the number of faulty parts in the next 30 parts made, to 1 d.p.

15. Explain what the Law of Large Numbers tells us about relative frequency as the number of trials increases.

16. A pin dropped 30 times landed point-up 19 times. The same pin dropped 1000 times landed point-up 612 times. Which result is more reliable evidence of the true probability, and why?

17. Two batches of 30 trials are combined: Batch A had 17 successes, Batch B had 14. Find the combined relative frequency out of 60 trials.

18. A weather station recorded 187 rainy days out of 1000. Predict how many rainy days would occur in the next 30 days, to the nearest whole number.
