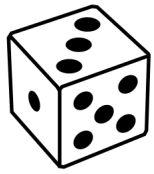
Name & Surname: _____ Class: _____ Date: _____

HOW LIKELY IS IT?



Probabilities from 0 to 1

About 35 minutes Level ★★★☆☆

PROBABILITY SCALE

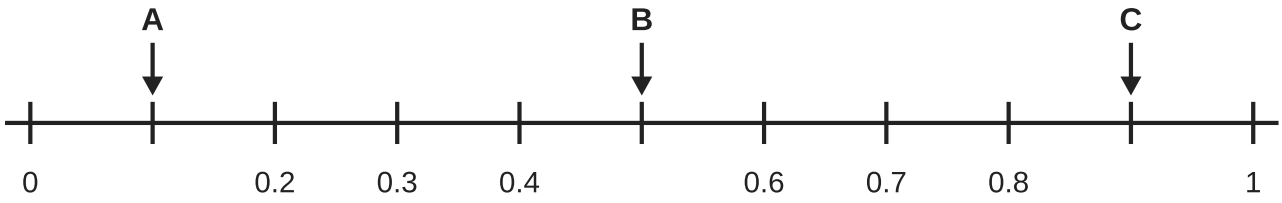
The **probability** of a chance event is a number between 0 and 1. Larger numbers mean greater **likelihood**.

- 0 means impossible. 1 means **certain**.
- Near 0 means **unlikely**. Around $\frac{1}{2}$ means neither unlikely nor likely.
- Near 1 means **likely**. A fair coin has P(heads) = $\frac{1}{2}$ = 0.5.

↑↓ TASK A

/4

Arrows A, B, and C show three probabilities. Write each value. Then mark D at 0.75 for a likely event.



A = ☐ B = ☐ C = ☐ Draw an arrow to show: 0.75

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READ THE SCALE

Practice ordering and naming likelihoods.

KEY WORDS

probability: a number 0 to 1 showing how likely something is

impossible: cannot happen, probability 0

unlikely: probably will not happen, near 0

likely: probably will happen, near 1

certain: will always happen, probability 1

TASK B

/12

Order probabilities and describe how likely events are.

WARM UP

1. What is the **probability** of heads with a fair coin? Write as a fraction.

Answer: _____

2. What is the **probability** of rolling a 2 with a fair six-sided die? Write as a fraction.

Answer: _____

3. Write $\frac{1}{2}$ as a **decimal**.

Answer: _____

4. Write 25% as a **decimal**.

Answer: _____

PRACTICE

5. Order from least **likely** to most likely: 0.2, 0.5, 0.9

Answer: _____

6. An event has probability 0.04. Is it unlikely, neither, or **likely**?

Answer: _____

7. An event has probability 0.51. Is it unlikely, neither, or **likely**?

Answer: _____

8. An event has probability 0.93. Is it unlikely, neither, or **likely**?

Answer: _____

PROBLEM SOLVING

9. A bag has 5 equal counters: 4 blue and 1 red. What is P(blue)? Use a **fraction**.

Answer: _____

10. For the same bag, write P(blue) as a **decimal**.

Answer: _____

11. Explain how you know blue is **likely**.

Answer: _____

12. A student says P(blue) is 4. Explain how you know that is **wrong**.

Answer: _____

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SPOT THE MISTAKE

Find what went wrong with probability thinking.

TASK C

/4

Find the wrong step and explain the likelihood correctly.



Student A

Can 1.2 be a **probability**?

1. Probability must be between 0 and 1.
2. 1.2 is greater than 1.
3. So 1.2 can be a probability because it is likely.

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student B

An event has probability 0.49. What is its **likelihood**?

1. 0.49 is close to $\frac{1}{2}$.
2. Around $\frac{1}{2}$ means neither unlikely nor likely.
3. So the event is unlikely.

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____

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USE REAL NUMBERS

Solve harder problems with 0, $\frac{1}{2}$, and 1.

TASK D

/12

Use fractions and decimals to show likelihood.

WARM UP

1 What is P(rolling a 7) with one standard six-sided **die**?

Answer: _____

2 What is P(rolling 1, 2, 3, 4, 5, or 6) with one standard **die**?

Answer: _____

3 Which is more **likely**: 0.15 or 0.65?

Answer: _____

4 Write $\frac{3}{4}$ as a **decimal**.

Answer: _____

PRACTICE

5 A spinner has 8 equal parts: 1 green and 7 white. What is P(green)? Use a **fraction**.

Answer: _____

6 Write P(green) as a **decimal**.

Answer: _____

7 Is green unlikely, neither, or **likely**? Explain how you know.

Answer: _____

8 How much larger is 0.9 than 0.4? Show with **subtraction**.

Answer: _____

PROBLEM SOLVING

9 A bag holds 10 marbles: 5 striped and 5 plain. What is P(striped)? Use a **fraction**.

Answer: _____

10 Write that **probability** as a percent.

Answer: _____

11 Is picking striped unlikely, neither, or **likely**? Explain how you know.

Answer: _____

12 Rain has probability 0.85 tomorrow. Should a student bring an umbrella? Explain using **likelihood**.

Answer: _____

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SHOW WHAT YOU KNOW

Link numbers to words for likelihood.

TASK E

/10

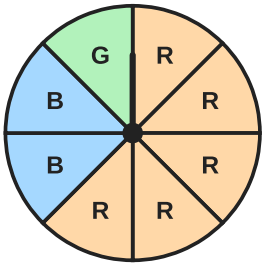
Complete the table to match numbers to likelihood.

Probability	Near 0, $\frac{1}{2}$, or 1?	Likelihood
0.03		
0.5		
0.95		
0		
1		

TASK F

/5

Spin the spinner once. Give each probability as a fraction.



R red (5)

B blue (2)

G green (1)

1. **P(red) =** _____
2. **P(blue) =** _____
3. **P(not green) =** _____
4. **P(red or green) =** _____
5. **P(yellow) =** _____

HOW DID I DO?

Circle a face for each line.

I can tell what a probability between 0 and 1 means.

I can decide if an event is unlikely, even, or likely.

I can find simple probabilities as fractions and decimals.

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Answer sheet: How Likely Is It?

Task A

A = 0.1; B = 0.5; C = 0.9; arrows at 0.75

Task B

1. $\frac{1}{2}$
2. $\frac{1}{6}$
3. 0.5
4. 0.25
5. 0.2, 0.5, 0.9
6. unlikely
7. neither unlikely nor likely
8. likely
9. $\frac{4}{5}$
10. 0.8
11. 0.8 is near 1, so blue is likely.
12. No, probability must be between 0 and 1.

Task C

1. Step 3 is wrong: A probability can never be greater than 1. Larger numbers stop at 1, which means certain. Correct answer: No, 1.2 cannot be a probability.

2. Step 3 is wrong: Values around $\frac{1}{2}$ are neither unlikely nor likely. Only values near 0 are unlikely. Correct answer: Neither unlikely nor likely.

Task D

1. 0
2. 1
3. 0.65 is more likely.
4. 0.75
5. $\frac{1}{8}$
6. 0.125
7. unlikely, because 0.125 is near 0.
8. 0.5
9. $\frac{1}{2}$
10. 50%
11. Neither unlikely nor likely because $\frac{1}{2}$ is around $\frac{1}{2}$.
12. Yes, 0.85 is near 1 so rain is likely.

Task E

0.03 | Near 0 | unlikely

0.5 | Near $\frac{1}{2}$ | neither unlikely nor likely

0.95 | Near 1 | likely

0 | 0 | impossible

1 | 1 | certain

Task F

1. P(red) = $\frac{5}{8}$
2. P(blue) = $\frac{1}{4}$
3. P(not green) = $\frac{7}{8}$
4. P(red or green) = $\frac{3}{4}$
5. P(yellow) = 0

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