BitWith Bite

MATHEMATICS WORKSHEET

Probability Distributions

Chapter: Probability · Level ★★☆ · Time: 30 min

SCORE ___ / 20

Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

- ✓ Check whether a distribution is valid.
- ✓ Ensure probabilities lie between 0 and 1.
- ✓ Compute a cumulative probability F(x).
- ✓ Distinguish a PMF from a PDF.

Section A · Concept Check • BEGINNER 4 × 1 = 4

1 Is P(X=0)=0.1, P(X=1)=0.4, P(X=2)=0.5 a valid distribution?

◯ A. Yes ◯ B. No ◯ C. Only partly ◯ D. Cannot tell

2 Is P(X=0)=0.2, P(X=1)=0.3, P(X=2)=0.3 valid?

◯ A. Yes ◯ B. No ◯ C. Only partly ◯ D. Cannot tell

3 For P(X=0)=0.1, P(X=1)=0.4, P(X=2)=0.5, F(1) =:

◯ A. 0.5 ◯ B. 0.4 ◯ C. 0.1 ◯ D. 0.9

4 Using the same distribution, F(2) =:

◯ A. 1.0 ◯ B. 0.5 ◯ C. 0.9 ◯ D. 0.4

Section B · Problem Solving • INTERMEDIATE 2 + 3×3 = 11

5 A valid distribution's probabilities sum to _____.

6 Each probability must lie between 0 and _____.

7 Is P(X=0)=0.1, P(X=1)=0.4, P(X=2)=0.5 a valid distribution?

8 Is P(X=0)=0.2, P(X=1)=0.3, P(X=2)=0.3 valid?

9 For P(X=0)=0.1, P(X=1)=0.4, P(X=2)=0.5, find F(1).

Section C · Challenge • CHALLENGE 5

10 Using the same distribution, find F(2).

Reflection — the most useful thing I learned: _____

A ___/4 B ___/11 C ___/5 Total ___/20

Teacher's Signature

Parent's Signature

✂ ANSWER KEY — FOLD OR CUT BEFORE HANDING OUT

1-A 2-B 3-A 4-A | 5 1 6 1 7 = Yes, sums to 1 8 = No, sums to 0.8 9 = 0.5 | 10 = 1.0