

Probability and Compound Events: math test solutions, Grade 7 – download the PDF

Test solutions with the detailed point scale. Add up your points and spot what to review.

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Marbles

/ 3 pts

There are 10 marbles.

a. $\frac{5}{10} = \frac{1}{2}$ (1 pt)

b. $\frac{8}{10} = \frac{4}{5}$ (1 pt)

c. 0, the event is impossible (1 pt)

2 Experiment and prediction

/ 3 pts

a. $\frac{30}{80} = \frac{3}{8} = 0.375$ (1 pt)

b. $\frac{1}{3} \approx 0.333$ (1 pt)

c. $\frac{22}{80} \times 400 = 110$ reds (1 pt)

3 Two dice

/ 4 pts

a. (1,4), (2,3), (3,2), (4,1): $\frac{4}{36} = \frac{1}{9}$ (1 pt)

b. Prime sums are 2, 3, 5, 7, 11 with $1 + 2 + 4 + 6 + 2 = 15$ outcomes, so $\frac{15}{36} = \frac{5}{12}$
(2 pts)

c. (1,1) to (6,6): $\frac{6}{36} = \frac{1}{6}$ (1 pt)

4 Pizza orders

/ 4 pts

a. Thin-cheese, thin-pepperoni, thin-veggie, thick-cheese, thick-pepperoni, thick-veggie:
6 outcomes (1 pt)

b. $\frac{1}{6}$ (1 pt)

c. 3 thin outcomes plus thick-pepperoni: $\frac{4}{6} = \frac{2}{3}$ (1 pt)

d. $\frac{1}{2} \times 120 = 60$ thin crusts (1 pt)

5 A probability model

/ 3 pts

a. $x = 1 - 0.4 - 0.15 - 0.1 = 0.35$ (1 pt)

b. $0.35 + 0.15 = 0.5$ (1 pt)

c. $0.1 \times 200 = 20$ (1 pt)

6 Free-throw simulation

/ 3 pts

a. 40% of 10 digits is 4 digits, for example 0, 1, 2, 3 (1 pt)

b. The digits 2, 0, 3, 1, 2 are in the set, so $\frac{5}{10} = 0.5$ (1 pt)

c. Only 10 trials were made. A small number of trials can differ from the theoretical probability; more trials get closer to 0.4 (1 pt)



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