ALBERT

Name _____ Date _____

Finding Conditional Probability Worksheet

Geometry · Common Core HSS-CP.B.6

> Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.

Practice

Builds the skill step by step.

1. A number cube is rolled. What is P(odd | less than 4)?

2. A card is drawn from a standard 52-card deck. What is P(ace | spade)?

3. A card is drawn from a standard 52-card deck. What is P(spade | ace)?

4. Two coins are flipped. What is P(both heads | first is heads)?

5. Two number cubes are rolled. What is P(sum is 6 | doubles)?

6. A spinner shows 1 to 10. What is P(even | greater than 6)?

7. A bag has 4 red marbles numbered 1–4 and 6 blue marbles numbered 1–6. A marble numbered 1 is drawn. What is P(blue | numbered 1)?

8. From that bag (red 1–4, blue 1–6), what is P(number is 1 or 2 | red)?

9. A class has 30 students, 18 of them girls. 6 of the girls wear glasses. What is P(wears glasses | girl)?

10. Two number cubes are rolled. What is P(sum is 10 | first cube is 6)?

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On Level

Grade-level practice.

1. Two number cubes are rolled. What is P(doubles | sum is 8)?

2. Two number cubes are rolled. What is P(sum is at least 10 | at least one cube is 6)?

3. A card is drawn from a standard 52-card deck. What is P(king | face card)?

4. A card is drawn from a standard 52-card deck. What is P(red | face card)?

5. The table shows 250 students' favorite subjects by grade. What is P(Grade 10 | prefers English)?

	Math	Science	English	Total
Grade 10	40	30	30	100
Grade 11	50	60	40	150
Total	90	90	70	250

6. Three coins are flipped. What is P(three heads | at least two heads)?

7. The table shows 250 students' favorite subjects by grade. Find P(prefers math | Grade 10) and explain what it means.

	Math	Science	English	Total
Grade 10	40	30	30	100
Grade 11	50	60	40	150
Total	90	90	70	250

8. A letter is chosen at random from the 8 letters of GEOMETRY. Given that it is one of the first four letters (G, E, O, M), what is P(vowel)?

9. A spinner shows 1 to 12. What is P(multiple of 3 | even)?

10. A number cube is rolled twice. What is P(second roll is greater than the first | first roll is 4)?

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Challenge

Multi-step and word problems that stretch it.

1. Two number cubes are rolled. What is P(at least one 5 | sum is 9)?

2. A family has 3 children, each equally likely a girl or a boy. What is P(all girls | at least one girl)?

3. Two cards are drawn without replacement from a standard 52-card deck. What is P(second is a heart | first is a heart)?

4. Two cards are drawn without replacement from a standard 52-card deck. What is P(second is a heart | first is not a heart)?

5. A whole number from 1 to 20 is chosen. What is P(prime | odd)?

6. Two number cubes are rolled. What is P(product is even | sum is even)?

7. Of 40 people, 18 are in group A, 15 in group B and 6 in both. What is P(A | B)?

8. For those 40 people (A 18, B 15, both 6), what is P(B | not A)?

9. What does P(A | B) = 0 tell you?

   A. A and B can't happen together.

   B. A and B are independent.

   C. B never happens.

   D. A always happens.

10. A bus was late on 9 of the 12 snowy days this winter. Find P(late | snow) and explain what it means.