

Watch. Practice. Understand. | Lesson 127

Algebra II Honors 10 2 Independent and Dependent Events

Watch the matching video: <https://www.youtube.com/watch?v=vxZwy62wPI4>

Practice focus: Conditional and dependent probability

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 A bag has 5 red and 3 blue counters. Find $P(\text{two red without replacement})$.

02 Find $P(\text{two red with replacement})$ from the same bag.

03 Of 40 students, 18 play music, 12 play sports, and 6 do both. Find $P(\text{music given sports})$.

04 If $P(A) = 0.6$, $P(B) = 0.5$ and $P(A \text{ and } B) = 0.4$, are the events independent?

Worked answers | Lesson 127

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01 A bag has 5 red and 3 blue counters. Find $P(\text{two red without replacement})$.

$(5/8)(4/7) = 5/14$; the second probability changes after the first draw.

02 Find $P(\text{two red with replacement})$ from the same bag.

$(5/8)^2 = 25/64$; replacement makes the draws independent.

03 Of 40 students, 18 play music, 12 play sports, and 6 do both. Find $P(\text{music given sports})$.

Among 12 sports students, 6 play music: $6/12 = 1/2$.

04 If $P(A) = 0.6$, $P(B) = 0.5$ and $P(A \text{ and } B) = 0.4$, are the events independent?

No. Independence would require $0.6(0.5) = 0.3$, which differs from 0.4.