



GLENCOE

## ALGEBRA 2

## 5-Minute Check

The administrators at a high school use a random number generator to simulate the probability of randomly selecting one student. The results are shown in the table. What is the probability of selecting a freshman?

- A. 0.20  
B. 0.25  
C. 0.34  
D. 0.425

Outcome	Frequency
1 (freshman)	17
2 (sophomore)	13
3 (junior)	10
4 (senior)	10

Dale examines the wiring of floor speakers. He expects to find defects in 1 out of every 40 speakers. Which simulation can be used to estimate the probability that the next speaker he examines has a defect.

- A. Roll a die 40 times.  
B. Flip a coin 40 times.  
C. Use a random number generator.  
D. Draw a card from a standard deck of cards.

5-Minute Check 4



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## Key Concept Margin of Error Definition and Formula

When a random sample is taken from a large population, the sample proportion has a margin of error.

Definition: the range of values below and above the sample

$$\text{margin of error} = \pm \frac{1}{\sqrt{n}} (100)$$

Formula: size of the random sample

A car company is debating the release of a new feature for drivers. The executive of the company did a poll on 300 drivers and determined that 43% will consider purchasing a new vehicle if that feature came equipped. Find the margin of error.

$$\text{Margin of error} = \pm \frac{1}{\sqrt{300}} \times 100$$

$$\text{Margin of error} = \pm 0.58 \times 100 \approx \pm 5.8$$

$$38. \frac{342}{450} = .76$$

$$39. \frac{369}{450} = .82$$

$$\begin{aligned} 40) & \pm \frac{1}{\sqrt{105}} (100) \\ & \pm \frac{1}{10.25} (100) \\ & \pm 9.75 \end{aligned}$$

Key Concept


**ALGEBRA 2**
Addition Rules for Probability: (or)

If two events (A and B) are mutually exclusive, the probability that A or B will occur:

$$P(A \text{ or } B) = P(A) + P(B)$$

If two events (A and B) are not mutually exclusive, the probability that A or B will occur:

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

Multiplication Rules for Probability: (and)

If two events (A and B) are independent, the the probability A and B will occur:

$$P(A \text{ and } B) = P(A) \times P(B)$$

If two events (A and B) are dependent, then the probability that A and B will occur:

$$P(A \text{ and } B) = P(A) \times P(B|A)$$

57. M.E.  $\frac{4}{11} + \frac{2}{11} = \frac{6}{11}$

58. N.M.E.  $\frac{112}{150} + \frac{48}{150} - \frac{16}{150} = \frac{144}{150} = \frac{24}{25}$

59. IND.  $\frac{8}{23} \times \frac{6}{23} = \frac{48}{529}$

60. DEP.  $\frac{10}{25} \times \frac{9}{24} = \frac{3}{20}$

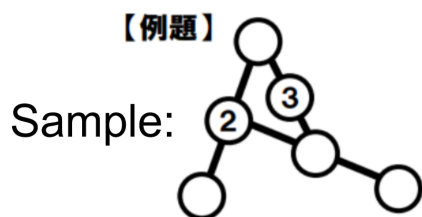
41. B  $55) \frac{5}{10} \cdot \frac{1}{2} = \frac{5}{20} = \frac{1}{4} = .25$

42. C

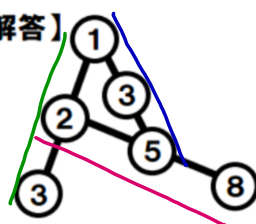
56)  $\frac{235}{285} = \frac{47}{57}$

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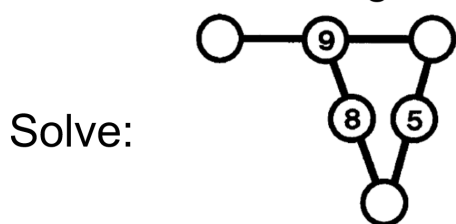
【例題】



【解答】



Challenge:



Bigger Challenge:

