Act. #63

1 IF THE PROBABILITY OF AN EVENT NOT HAPPENING IS 5/13. WHAT IS THE ODDS THAT THE EVENT WILL OCCUR?

2 IF 36 GRADES HAVE A MEAN OF 92 AND STANDARD DEVIATION 10. WHAT ARE THE ODDS OF A GRADE BEING BETWEEN AN 82 AND 102?

Determine the probability of each event.

3 You toss a coin and get heads.   **4** A person was born on a weekday.

Find the probability of each outcome if a computer randomly chooses a letter in the word "mathematical."

5 the letter t **6** the letter a or c **7** the letter d **8** not an m

Find the odds of each outcome if a computer randomly chooses a letter in the word "Alabama."

9 the letter a **10** the letter b **11** a consonant   **12** not a g

13 **Standardized Test Practice** What are the odds of randomly selecting a dime from a dish containing 11 pennies, 6 nickels, 5 dimes, and 3 quarters?

  A 5:1   **B** 1:5   **C** 1:4   **D** 4:1

14 THERE ARE 7 CONTESTANTS IN A HALLOWEEN CONTEST. HOW MANY DIFFERENT WAYS CAN THE CONTESTANTS FINISH AS THE WINNER AND FIRST AND SECOND RUNNER-UP?

15 A group of 12 people need to form a line. The line will consist of exactly 9 of the people. Person X and Person Y have to be either third or fourth in line. How many different orders are possible?

16 A town has 685 households. The number of people per household is normally distributed with a mean, μ, of 3.67 and a standard deviation, σ, of 0.34. *Approximately* how many households have between 2.99 and 4.01 people?

17 A soccer coach has 13 offensive players that he must choose 7 for the game, 11 defensive players that he needs 4 of, and 3 goalies that he only needs one. How many different line-ups could he develop?

18 The scores on a recent test are normally distributed. John's test score of 69 was 1 standard deviation below the mean. Betty's test score of 99 was 3 standard deviations above the mean. What are the mean and standard deviation for the test score distribution?

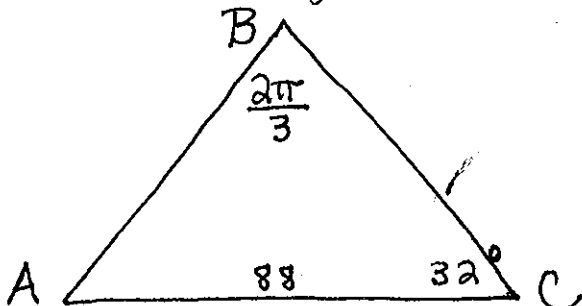**19** A manufacturing plant produces a special kind of lightbulb.

- Each lightbulb produced has a 0.040 probability of being defective.
- Five lightbulbs are chosen at random from the production line.

To the nearest thousandth, what is the probability that exactly two of the five bulbs will be defective?

A   0.014

B   0.016

C   0.018

D   0.020

20 Find the _length_ of side a.

$$B$$
$$\frac{2\pi}{3}$$
$$A \qquad 88 \qquad 32° \qquad C$$

21 IF A bag has 3 RED marbles, 8 green marbles, AND 10 Blue marbles. What are the _odds_ you will pick out a marble that is _Not_ green?