

Spring Break Homework



Class: 702

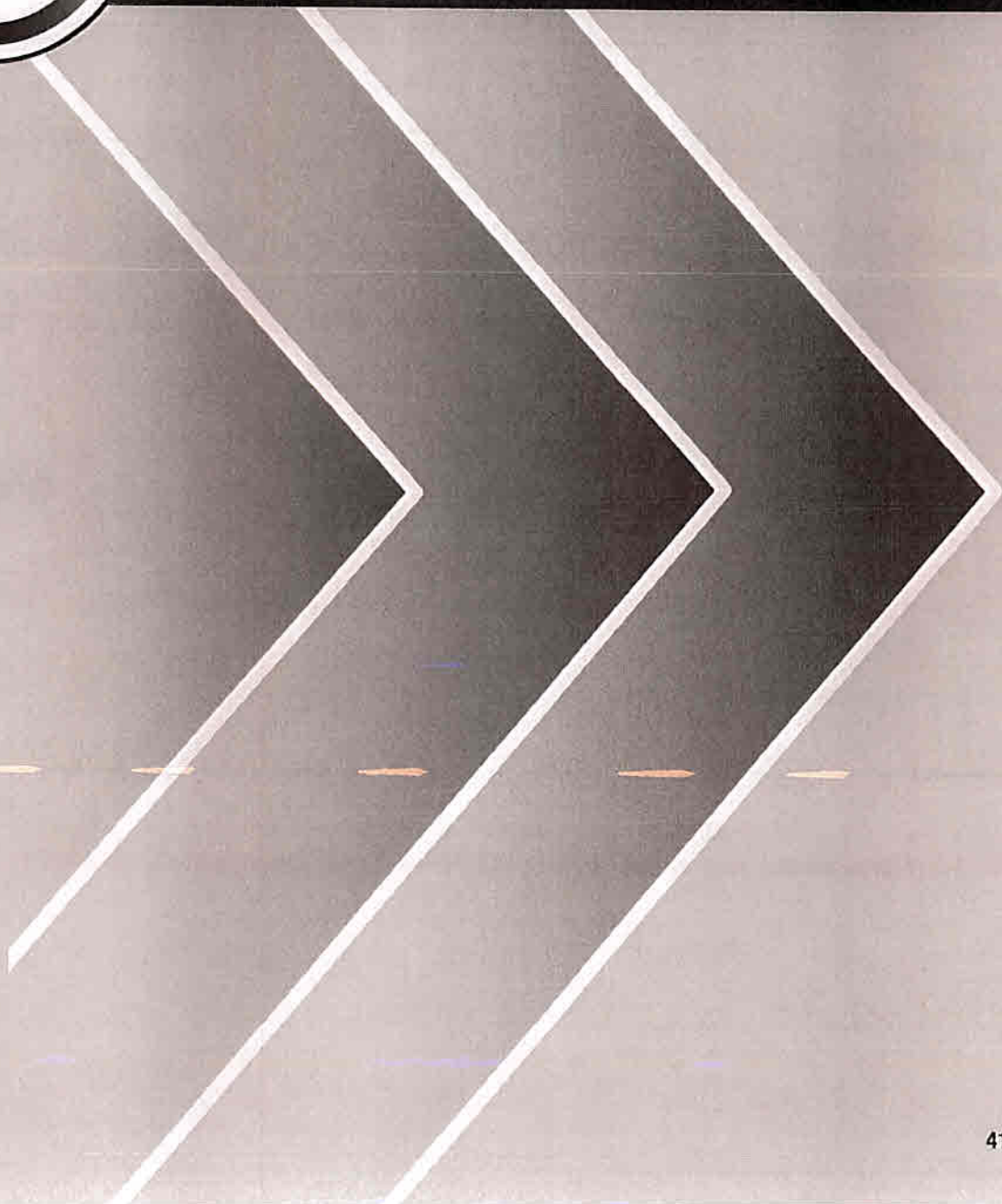
Name _____

Due 4-29-2019

Note: Math state exam is on May 1st, the third day after
we come back.



Practice Test 2



TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Be sure to carefully read all the directions in the test book.
- Read each question carefully and think about the answer before choosing your response.
- Look for words that are **bolded**. They are important.
- Read all the answer choices and then go back and pick the best answer for the question.

- 1 Jenise wants to find out if the students at her school would support using school money to buy new band uniforms. Which survey will result in a random sample?
- A She asks each student on her bus.
 - B She asks all band members in the school.
 - C She picks every fourth student that leaves the school on Tuesday.
 - D She picks 75 names at random, sends emails, and records those that return.
- 2 An athlete pays $\frac{1}{10}$ of her annual income to her agent. The agent pays $\frac{2}{9}$ of that money to his assistant. What fraction of her annual income is the athlete paying the assistant?
- A $\frac{2}{10}$
 - B $\frac{1}{9}$
 - C $\frac{1}{45}$
 - D $\frac{9}{20}$
- 3 A clock tower has a circular clock face with a circumference of 48π feet. What is the radius of the clock face?
- A 6 feet
 - B 12 feet
 - C 24 feet
 - D 72 feet

- 4 Jonas has a spinner divided into 3 congruent sections, numbered 1 to 3. He also has a number cube, with faces numbered 1 to 6. He created the table below to show all the possible outcomes for spinning the spinner and tossing the number cube.

POSSIBLE OUTCOMES

	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)

Jonas wants to find the probability that both the spinner and the number cube will land on an odd number. Which of the following represents the complete list of favorable outcomes for this experiment?

- A (1, 1), (3, 3)
- B (1, 1), (1, 3), (1, 5)
- C (1, 1), (1, 3), (1, 5), (3, 1), (3, 3), (3, 5)
- D (1, 1), (1, 3), (1, 5), (2, 1), (2, 3), (2, 5), (3, 1), (3, 3), (3, 5)

- 5 Marissa simplified the expression shown below as follows.

$$10 - 25 - 6 + (-2)$$

$$-15 - 6 + (-2) \quad \text{Step 1}$$

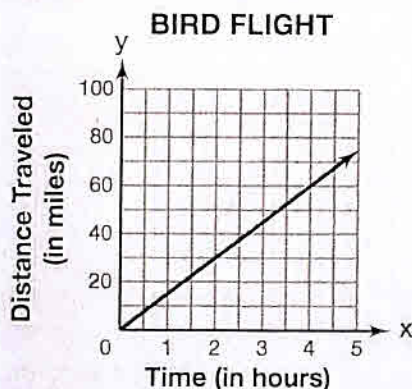
$$-9 + (-2) \quad \text{Step 2}$$

$$-11 \quad \text{Step 3}$$

Which of the following best describes Marissa's mistake?

- A In Step 1, she should have replaced $10 - 25$ with 15, not -15 .
- B In Step 1, she should have replaced $10 - 25$ with -35 , not -15 .
- C In Step 2, she should have replaced $-15 - 6$ with -21 , not -9 .
- D In Step 2, she should have replaced $-15 - 6$ with 21, not -9 .

- 6 The graph below shows the distance that a bird flies over time.



What does the point (0, 0) on this graph mean?

- A The bird flies at a speed of 0 miles per hour.
- B The bird cannot fly.
- C The time the bird flies is not measured.
- D Before the bird starts flying, he has not traveled any distance.

- 7 A park is $\frac{3}{4}$ mile long and $\frac{1}{2}$ mile wide. Which fraction represents the ratio of the park's length to its width?

- A $\frac{3}{8}$
- B $\frac{1}{2}$
- C $\frac{3}{2}$
- D $\frac{8}{3}$

- 8 A rectangular window has a height of $5\frac{1}{2}$ feet and a width of $1\frac{1}{2}$ feet. What is the perimeter of the window?

- A 7 feet
- B 13 feet
- C 14 feet
- D 28 feet

- 9 The table shows the results of spinning a spinner that has the numbers 1 through 4.

SPINNING A SPINNER

Result	Number of Times
1	20
2	15
3	10
4	5
Totals	50

Based on the results given in the table, what is the probability of landing on 3?

- A 0.3
- B 0.25
- C 0.2
- D 0.1

- 10 The high school basketball team has a mean height of 71 inches. The junior high school basketball team has a mean height of 64 inches. The mean average deviation of each data set is 2.8. Which comparison of the data sets is correct?

- A The difference in the mean heights is greater than twice the mean absolute deviation, so there is some overlap of the data.
- B The difference in the mean heights is greater than twice the mean absolute deviation, so there is a large amount of overlap of the data.
- C The difference in the mean absolute deviation is zero, so there is no overlap of the data.
- D The difference in the mean absolute deviation is zero, so there is complete overlap of the data.

- 11** Simplify the expression below.

$$\frac{2}{3} \times \left(-\frac{1}{6}\right)$$

- A 4
- B $\frac{1}{9}$
- C $-\frac{1}{9}$
- D -4

- 12** Which of the following shows how the expression below can be factored using the greatest common factor?

$$6p^3 - 12p^2 + 9p$$

- A $3(2p^3 - 4p^2 + 3p)$
- B $3p(2p^2 - 4p + 3)$
- C $3p^2(2p^2 - 4p + 3)$
- D $6p(p^2 - 2p + 9)$

- 13** Mary waits tables at a diner every weekend to make extra money. She donates 20% of her tip to her favorite charity and then keeps the rest. Last weekend Mary earned \$250 in tips. How much money did Mary keep for herself last weekend?

- A \$200
- B \$125
- C \$50
- D \$25

- 14 Aaron recorded the number of inches of rainfall for 6 randomly chosen days in April and May, as shown below.

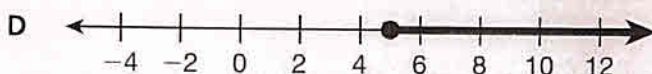
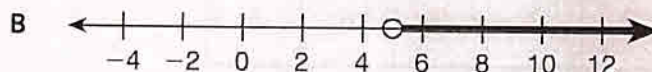
RAINFALL (in inches)

April	0	$\frac{1}{2}$	4	2	2	$\frac{1}{2}$
May	1	0	1	$\frac{1}{2}$	0	$\frac{1}{2}$

Based on the means of these sets of data, which of the following is a reasonable conclusion?

- A On average, the amounts of rainfall were the same in April and May.
- B On average, the amounts of rainfall were higher in April than in May.
- C On average, the amounts of rainfall were higher in May than in April.
- D There was greater variability in the amounts of rainfall in May than in April.

- 15 Adita spends more than \$24 at the gift shop. She buys a mug for \$9 and 3 books that cost the same amount. Which inequality shows the cost in dollars, d , of each book?



16 Which of the following is the decimal equivalent to $\frac{5}{12}$?

- A 2.4
- B 0.512
- C $0.41\overline{6}$
- D $0.\overline{416}$

17 Trinh has \$14.44 in her school lunch account. She spends \$7.75 on lunches and deposits \$6.50. What is her new balance?

- A \$28.69
- B \$13.81
- C \$13.19
- D \$0.19

18 Ethan measured the side length and perimeter of five squares, as shown in the table below.

MEASURE OF SQUARES

Side Length (in inches)	2	3	5	6	9
Perimeter (in inches)	8	12	20	24	36

Which of the following best explains why these values are or are not in a proportional relationship?

- A They are proportional, because the perimeter always increases by the same amount from column to column.
- B They are proportional, because the ratio of perimeter to side length is always 4:1.
- C They are not proportional, because the side length increases by varying amounts from column to column.
- D They are not proportional, because the difference between side length and perimeter is different for each column.

- 19 Simplify the expression below.

$$-3\left(-\frac{1}{6} + 0.3\right)$$

- A -1.4
- B -0.4
- C 0.8
- D 3.9

- 20 Simplify the expression below.

$$-3x^2 + 7x + 2 + x^3 - x^2 - 9$$

- A $-3x^2 + 7x - 7$
- B $x^3 - 3x^2 + 7x - 7$
- C $x^3 - 4x^2 + 7x - 9$
- D $x^3 - 4x^2 + 7x - 7$

- 1 A spinner is divided into 12 congruent sections, numbered 1 through 12. If Eleanor spins the spinner once, what is the probability that it will land on a multiple of 5?

- A $\frac{1}{12}$
- B $\frac{1}{6}$
- C $\frac{1}{4}$
- D $\frac{3}{4}$

- 22 A factory manager conducted tests on a random sample of 150 products. Of the products tested, 2 were found to have defects. Based on this information, how many products in a batch of 3,000 are likely to be defective?

A 20
B 40
C 60
D 120

- 23 Temperature in degrees Fahrenheit is equal to 32 more than $\frac{9}{5}$ times the temperature in degrees Celsius. One day, the high temperature in Edison, NJ, was 95 degrees Fahrenheit. What was the high temperature in degrees Celsius?

A 35°C
B 71°C
C 113°C
D 203°C

- 24 Which phrase describes a relationship that has a constant of proportionality of 4.6?

A The value of y is equal to the sum of x and 4.6.
B The value of y is equal to the product of 4.6 and x .
C The value of y is equal to the sum of 4.6 and the product of 4.6 and x .
D The value of y is equal to the difference between 4.6 and the product of 4.6 and x .

25 A repair crew needs to mark off the area of the sidewalk they are working on. They end up using 26 yards of netting to create a rectangular work zone around the repair site. If the work zone is 4 yards wide, how long is the work zone?

- A 6.5 yards
- B 9 yards
- C 11 yards
- D 22 yards

26 The probability of drawing a green marble from a bag of 40 marbles is $\frac{3}{5}$. The probability of drawing a yellow marble from the same bag is $\frac{3}{10}$. Which statement correctly describes the outcomes for drawing one marble from this bag?

- A Drawing a yellow marble is impossible.
- B Drawing a green marble is unlikely.
- C Drawing a yellow marble is neither likely nor unlikely.
- D Drawing a green marble is more likely than drawing a yellow marble.

27 Simplify the expression below.

$$(-0.2) \times 0.4 \times (-5)$$

- A 4
- B 0.4
- C -0.4
- D -4

28 On August 1, Ira's bank balance was \$300. During the month, he wrote checks for \$450.00 and \$115.25 and made one deposit of \$225.00. Which of the following best represents her checking account balance at the end of the month?

- A -\$490.25
- B -\$65.00
- C -\$40.25
- D \$1090.25

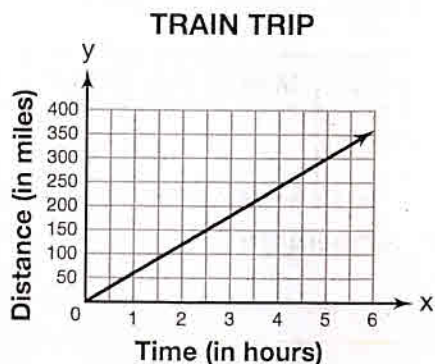
STOP

TIPS FOR TAKING THE TEST

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- Read each question carefully and think about the answer before choosing your response.
- Look for words that are **bolded**. They are important.
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- 29 The line graphed below represents the total distance traveled by a train over time.



Based on this graph, which of the following statements is true?

- A The train traveled 300 miles in 1 hour.
- B The train traveled 300 miles in 4 hours.
- C The train traveled 150 miles in 3 hours.
- D The train traveled 120 miles in 2 hours.

- 30 Erika wants to know what percent of the seventh-grade students at her school play musical instruments. She surveyed a random sample of seventh-grade students at her school. Which of the following best explains why this sample is or is not representative of the population Erika wants to study?

- A The sample is representative, because it is a random sample that is drawn from the population she wants to study.
- B The sample is not representative, because it is a random sample.
- C The sample is not representative, because it does not include every seventh-grade student in the school.
- D The sample is not representative, because it does not include eighth-grade students.

- 31** The table below shows the high temperature, in $^{\circ}\text{F}$, each day in Fairbanks, Alaska, during a week in January.

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat
High Temperature (in $^{\circ}\text{F}$)	-8	2	-6	-3	4	5	-1

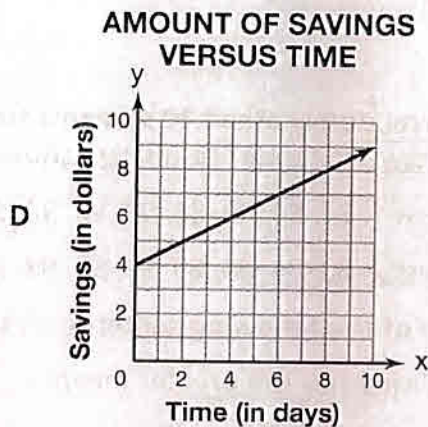
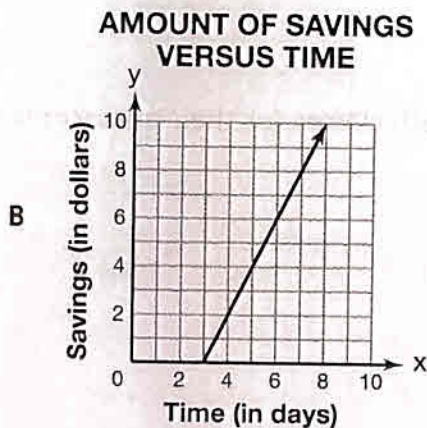
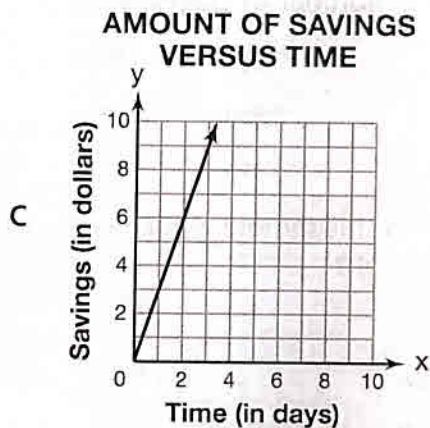
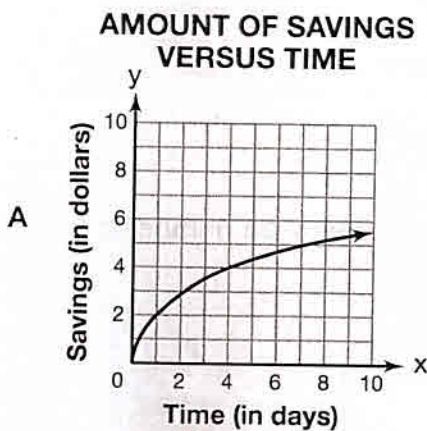
What was the mean high temperature?

- 32** The temperature has changed by -8.4°F over the last 1.5 hours. What is the average change in the temperature each hour?

- A 5.6°F
- B 0.56°F
- C -0.56°F
- D -5.6°F

33

Tomas adds money to his savings account. Which graph shows a proportional relationship between the amount of money in the account and the time in days?



- 34** Hana wants to estimate the average number of pages in a cookbook. She randomly chooses 12 cookbooks from the cookbook section at her town's library and records the total number of pages, as shown below.

349	208	620	495
384	243	130	395
215	128	93	190

Based on this sample, which is the **best** estimate of the mean number of pages in a cookbook?

- A 229
- B 288
- C 418
- D 527

- 35** Aiden randomly asked 10 students from two math classes for their quiz scores from yesterday's quiz. Her results are shown below.

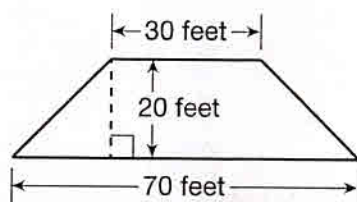
Class 1: 84, 84, 88, 88, 92, 92, 92, 92, 96, 100

Class 2: 80, 84, 88, 88, 92, 92, 92, 96, 96, 100

Which of the following sentences is true?

- A Class 2 has the greater mean.
- B Class 2 has the greater median.
- C Class 2 has the greater interquartile range.
- D Class 2 has the greater mode.

- 36 Talia makes a scale drawing of the stage at her school. The stage has the dimensions shown.



Scale
2.5 feet : 4 inches

[not drawn to scale]

What area, in square inches, does the scale drawing have?

- A 391 square inches
B 1,000 square inches
C 1,600 square inches
D 2,560 square inches
- 37 Ryan currently makes \$12 per hour at his part time job. Due to Ryan's impeccable work ethic, his boss has decided to give him a raise. Ryan's boss will increase his pay by one-third of its current value. What will Ryan's new hourly rate be?
- A \$4
B \$8
C \$14
D \$16
- 38 A jacket has a regular price of \$80. It is on sale for 10% off. The sales tax is 7%. What is the total cost of the jacket including tax?
- A \$81.84
B \$77.04
C \$72.00
D \$66.96

- 39 A recipe calls for $1\frac{1}{2}$ cups flour to $\frac{3}{4}$ cup grape jelly. How many cups of grape jelly are needed for each cup of flour?

- A $\frac{1}{4}$ cup of grape jelly for each cup of flour
- B $\frac{1}{2}$ cup of grape jelly for each cup of flour
- C $1\frac{1}{8}$ cups of grape jelly for each cup of flour
- D 2 cups of grape jelly for each cup of flour

- 40 The table below shows the distance, d , that a model train travels over time, t .

MOVEMENT OF A MODEL TRAIN

Time (in seconds)	Distance (in meters)
3	3.6
6	7.2
9	10.8
12	14.4

Which equation represents the relationship of distance, d , and time, t , for the train?

- A $d = 0.83t$
- B $d = 3t$
- C $d = 3.6t$
- D $d = 1.2t$

- 41 The price of a computer is marked down from \$550 to \$484 for a sale. The following week, the computer is marked down again by the same percent as during the week before. How much lower than the original price is the price after the second markdown?

- A \$425.92
- B \$132.00
- C \$124.08
- D \$58.08

42 Which expression is equivalent to $\frac{3}{8} \cdot (3x - 40)$?

A $3x - 15$

B $\frac{3}{8}x - \frac{3}{8}$

C $\frac{9}{8}x - 15$

D $\frac{9}{8}x - 40$

43 One particular type of plant needs at least 70 ounces of water each week (7 days) and no more than 100 ounces. Which set of inequalities represents the amount of water, w , that the plant should receive per day?

A $70 < w < 100$

B $10 < w < 14\frac{2}{7}$

C $70 \leq w \leq 100$

D $10 \leq w \leq 14\frac{2}{7}$

44 Jonathon spins a spinner that has the numbers 1 to 8. Which outcome is impossible?

A landing on a 5

B landing on an even number

C landing on a number that is 8 or less

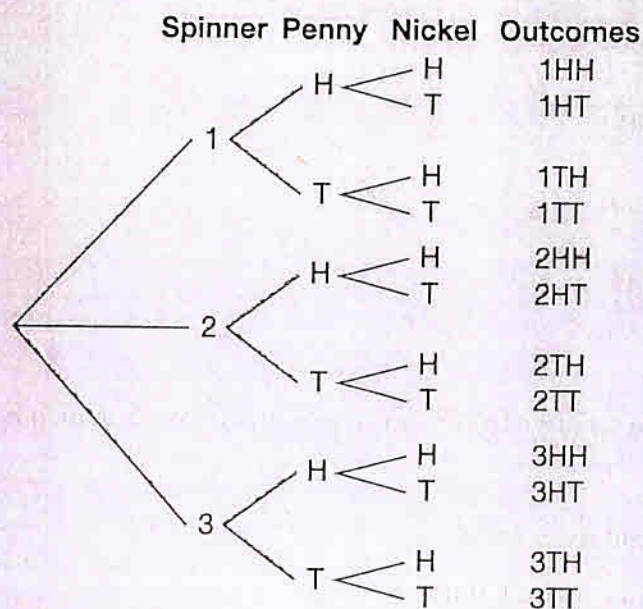
D landing on a number greater than 10

Go On

- 45** Tammy knits custom scarves. Last year, she charged \$2.50 for each $\frac{1}{2}$ foot of scarf. This year, she increases the charge per half foot by 6%. How much does she earn this year to knit a scarf that is $4\frac{1}{2}$ feet long?

A \$23.85
 B \$22.50
 C \$11.93
 D \$1.35

- 46** Amari makes the tree diagram shown below to find the possible outcomes of rolling a spinner with equal sections numbered 1 through 3, tossing a penny, and tossing a nickel.



What is the probability of landing on 2 and having at least one coin land heads up?

A $\frac{1}{6}$
 B $\frac{1}{4}$
 C $\frac{1}{3}$
 D $\frac{3}{4}$