Texas STAAR 2017 Grade 7 Math

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STAAR GRADE 7 MATHEMATICS REFERENCE MATERIALS

STAAR® State of Texas Assessments of Academic Readiness

LINEAR EQUATIONS

Slope-intercept form	$y = mx + b$
Constant of proportionality	$k = \frac{y}{x}$

CIRCUMFERENCE

Circle	$C = 2\pi r$	or	$C = \pi d$

AREA

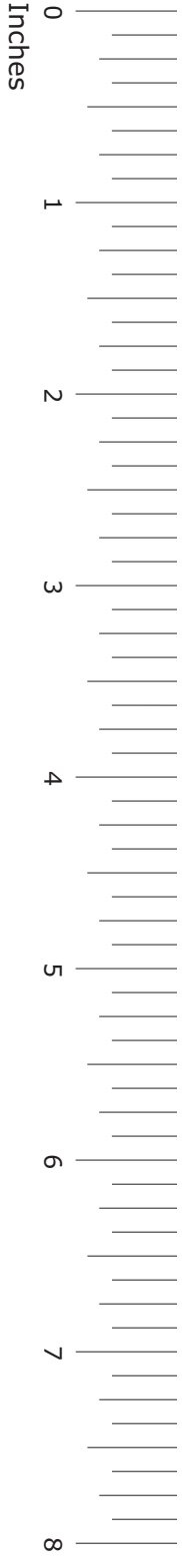
Triangle	$A = \frac{1}{2}bh$
Rectangle or parallelogram	$A = bh$
Trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$
Circle	$A = \pi r^2$

VOLUME

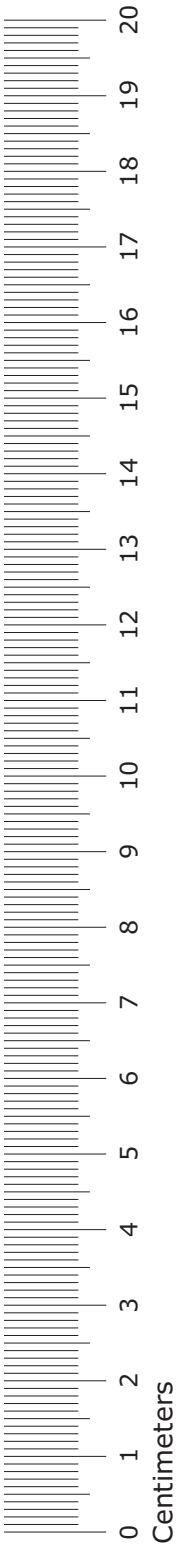
Prism	$V = Bh$
Pyramid	$V = \frac{1}{3}Bh$

ADDITIONAL INFORMATION

Pi	$\pi \approx 3.14$	or	$\pi \approx \frac{22}{7}$
Distance			$d = rt$
Simple interest			$I = Prt$
Compound interest			$A = P(1 + r)^t$



STAAR GRADE 7 MATHEMATICS REFERENCE MATERIALS



LENGTH

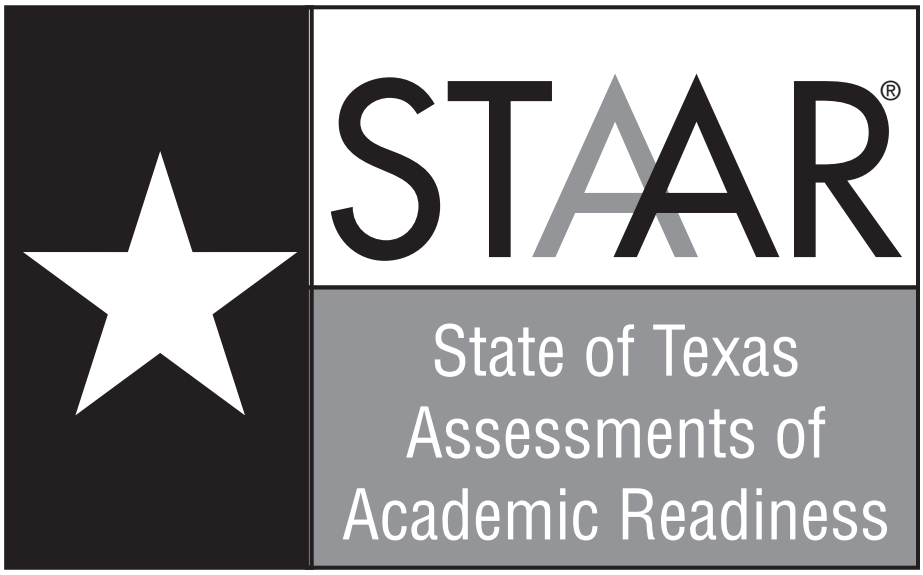
Customary	Metric
1 mile (mi) = 1,760 yards (yd)	1 kilometer (km) = 1,000 meters (m)
1 yard (yd) = 3 feet (ft)	1 meter (m) = 100 centimeters (cm)
1 foot (ft) = 12 inches (in.)	1 centimeter (cm) = 10 millimeters (mm)

VOLUME AND CAPACITY

Customary	Metric
1 gallon (gal) = 4 quarts (qt)	1 liter (L) = 1,000 milliliters (mL)
1 quart (qt) = 2 pints (pt)	
1 pint (pt) = 2 cups (c)	
1 cup (c) = 8 fluid ounces (fl oz)	

WEIGHT AND MASS

Customary	Metric
1 ton (T) = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)



GRADE 7

Mathematics

Administered May 2017

RELEASED

DIRECTIONS

Read each question carefully. For a multiple-choice question, determine the best answer to the question from the four answer choices provided. For a griddable question, determine the best answer to the question. Then fill in the answer on your answer document.

1 Mari bought 6 packets of tomato seeds. Each packet contained 24 seeds. She planted 1 packet of the seeds, and 15 seeds sprouted.

Which statement about the seeds in the remaining packets is best supported by this information?

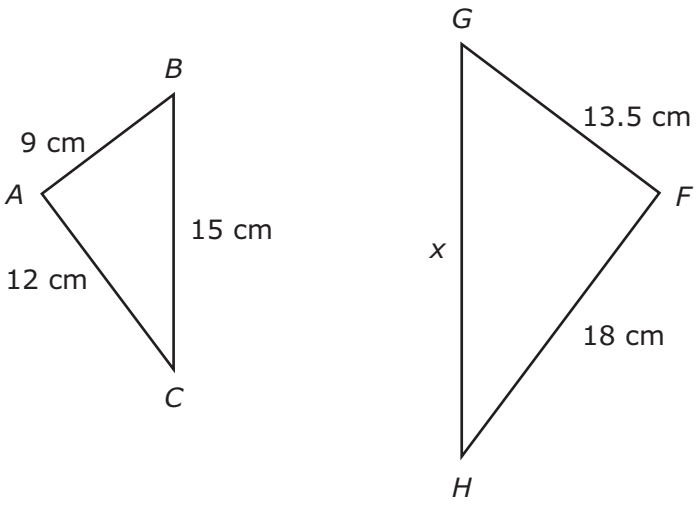
A No more than 50 seeds will sprout.

B Between 50 and 100 seeds will sprout.

C At least 100 but no more than 120 seeds will sprout.

D All 120 seeds will sprout.

2 Triangle *ABC* is similar to triangle *FGH*.



What is the value of x in centimeters?

F 22.5 cm

G 8 cm

H 10.8 cm

J 30 cm

---

3 If $x = 14$, which equation is true?

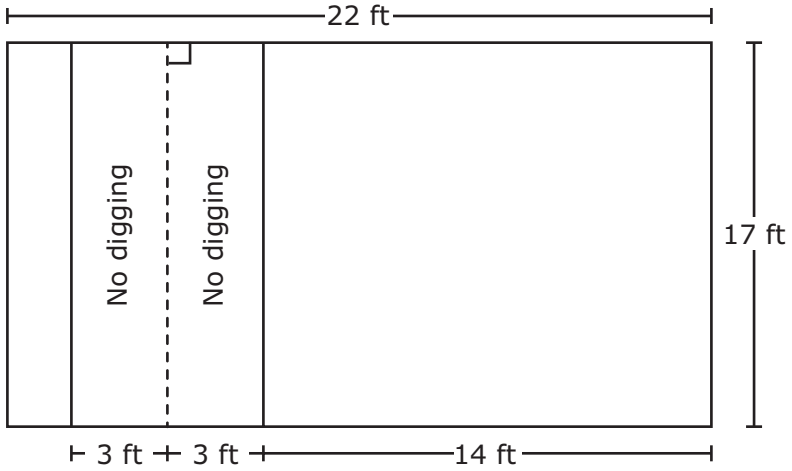
A $3(20 - x) = 44$

B $3(12 - x) = 6$

C $2(x - 3) = 22$

D $2x - 3 = 22$

4 A utility line runs underground through Shayne's rectangular backyard. Shayne is not allowed to dig within 3 feet of the utility line. The diagram below shows the dimensions of Shayne's backyard in feet. The dashed line represents the utility line.



What is the area in square feet of the part of the backyard in which Shayne is allowed to dig?

F 272 ft^2

G 374 ft^2

H 102 ft^2

J 59 ft^2

5 The table shows the prices of some breakfast items at a restaurant. Sara ordered 2 eggs, a slice of bacon, and a glass of orange juice for breakfast. The sales tax for the order was $0.48. She paid for her breakfast with a $10 bill.

Breakfast Menu

Item	Price
One egg	$1.69
Slice of bacon	$1.49
Glass of orange juice	$1.09

How much change should Sara receive from the $10 bill?

A $3.56

B $6.44

C $5.25

D $4.75

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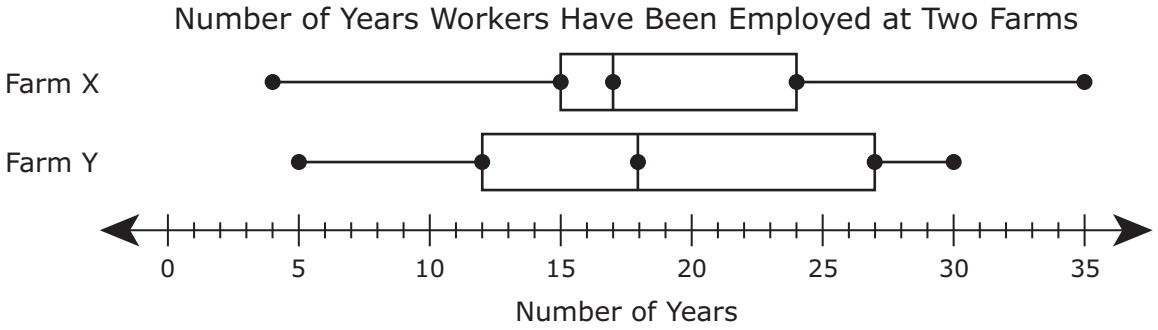
6 The box plots show data about the number of years that farmworkers have been employed at each of two farms.



Which statement is best supported by the information in the box plots?

F The range of the data for Farm Y is equal to the range of the data for Farm X.

G The third quartile of the data for Farm Y is less than the third quartile of the data for Farm X.

H The median of the data for Farm Y is greater than the median of the data for Farm X.

J The first quartile of the data for Farm Y is greater than the first quartile of the data for Farm X.

7 Lawrence's father gave him 200 baseball cards. Each week, Lawrence purchases 25 baseball cards to add to his collection.

Which inequality can be used to find w, the number of weeks after starting his collection when Lawrence will have more than 750 baseball cards in his collection?

A $200w + 25 < 750$

B $25w + 200 < 750$

C $200w + 25 > 750$

D $25w + 200 > 750$

---

8 A circular tablecloth has a radius of 2.5 feet. Kyle is sewing a piece of ribbon around the edge of the tablecloth. If Kyle has exactly enough ribbon, which measurement is closest to the length of the piece of ribbon in feet?

F 7.85 ft

G 15.7 ft

H 19.63 ft

J 31.4 ft

9 Which of these does NOT represent the distance a car travels when going 55 miles per hour?

A $d = 55t$, where d represents distance in miles and t represents time in hours

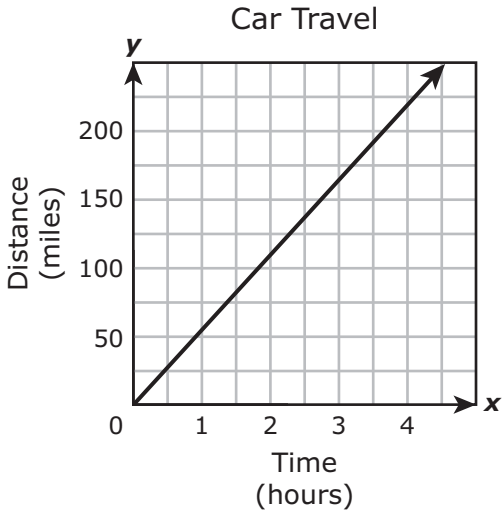
B

Car Travel

Time (hours)	Distance (miles)
1	55
1.5	82.5
2	110
2.5	137.5

C In 3 hours a car will travel a distance of 160 miles.

D



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10 Some doctors recommend that men drink 3 liters of water every day. There are approximately 29.6 milliliters in 1 fluid ounce. Which measurement is closest to the number of fluid ounces in 3 liters?

F 89 fl oz

G 101 fl oz

H 10 fl oz

J 33 fl oz

11 Tara has two bags of marbles. The first bag contains 6 red marbles, 5 blue marbles, and 4 green marbles. The second bag contains 3 red marbles, 2 blue marbles, and 4 green marbles. Tara will randomly select 1 marble from each bag.

What is the probability that Tara will select a blue marble from each bag?

A $\frac{5}{9}$

B $\frac{1}{135}$

C $\frac{1}{6}$

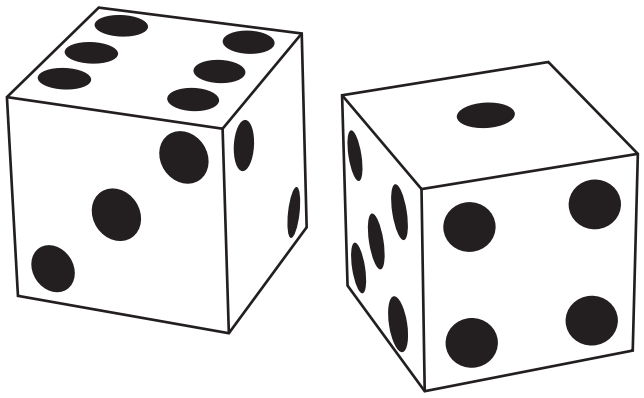
D $\frac{2}{27}$

---

12 José paid $47.00 for 4 movie tickets. Each ticket cost the same amount. What was the cost of each movie ticket in dollars and cents?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

13 Two identical number cubes are shown in the picture. The edge length of these number cubes is 3 centimeters.



What is the combined volume of the two number cubes in cubic centimeters?

A 54 cm^3

B 18 cm^3

C 9 cm^3

D 27 cm^3

---

14 The price of a video game was reduced from $60 to $45. By what percentage was the price of the video game reduced?

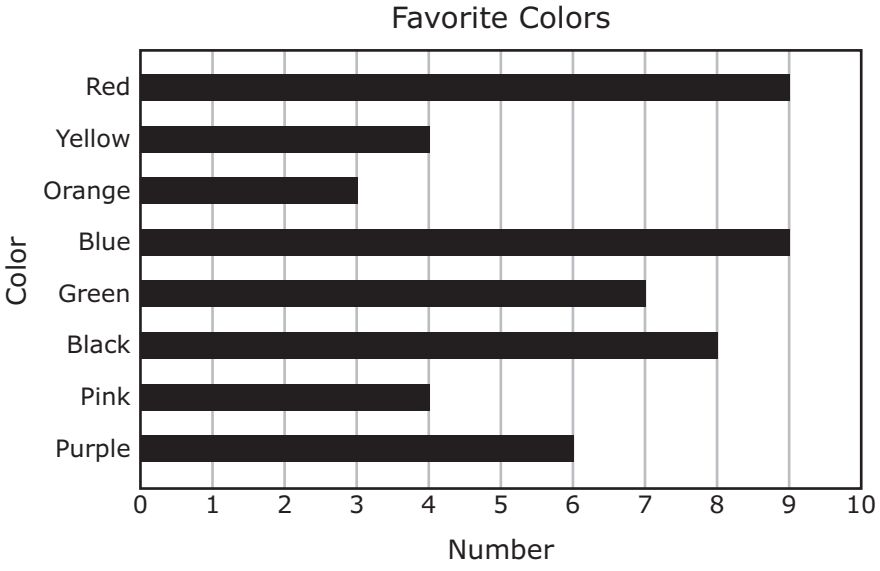
F 15%

G 25%

H 75%

J 40%

15 The graph shows the favorite colors chosen by some middle school students.



Which statement is supported by the information in the graph?

A Fewer than 30% of the students chose red, yellow, or orange as their favorite color.

B More than $\frac{1}{10}$ of the students chose pink as their favorite color.

C Exactly 18% of the students chose blue as their favorite color.

D Exactly $\frac{2}{5}$ of the students chose green, black, or purple as their favorite color.

16 The table shows the distance, y, a cheetah can travel in feet in x seconds.

Speed of a Cheetah

Time, x (seconds)	Distance, y (feet)
5	470
10	940
15	1,410
20	1,880
25	2,350

Based on the information in the table, which equation can be used to model the relationship between x and y?

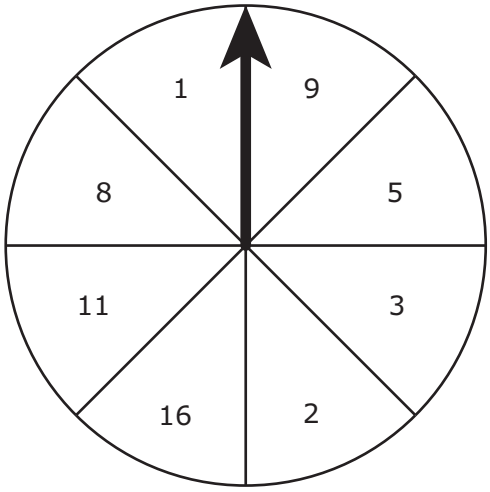
F $y = 5x$

G $y = x + 5$

H $y = x + 470$

J $y = 94x$

17 The spinner shown has eight congruent sections.



The spinner is spun 120 times. What is a reasonable prediction for the number of times the spinner will land on an even number?

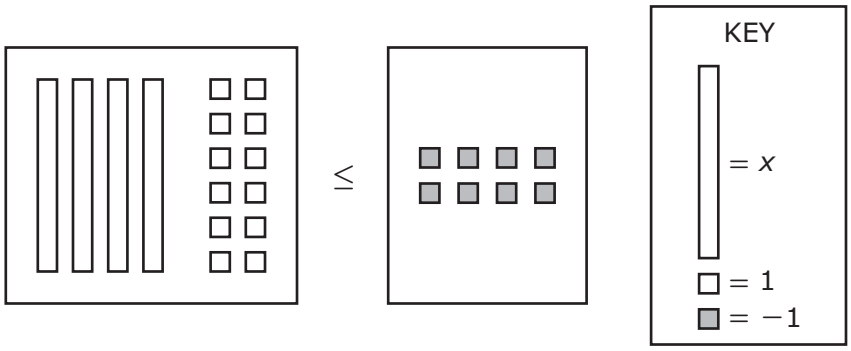
A 75

B 45

C 15

D 40

18 The model represents an inequality.



What is the solution set for the inequality?

F $x \leq -5$

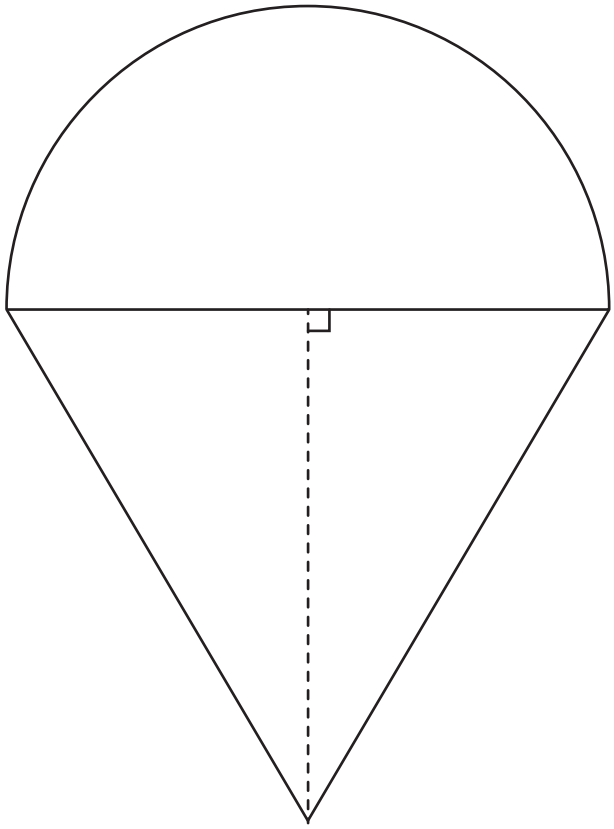
G $x \leq 5$

H $x \leq 1$

J $x \leq -14$

GO ON

19 A figure was created using a triangle and a semicircle. Use the ruler provided to measure the dimensions of the triangle and the semicircle to the nearest centimeter.



Which measurement is closest to the area of the figure in square centimeters?

A 78 cm^2

B 81 cm^2

C 106 cm^2

D 53 cm^2

20 In Oscar's monthly budget, each category is assigned a certain percentage of his monthly income. Oscar's monthly income is $2,250.

Monthly Budget

Category	Percentage
Savings	16%
House payment	35%
Telephone	5%
Utilities	6%
Car payment	17.5%
Car insurance	6.5%
Life insurance	3%
Emergencies	11%

Which statement is NOT supported by the information in the table?

F Oscar puts $360 of his monthly income into savings.

G Less than $900 of Oscar's monthly income is for his house payment and life insurance.

H Oscar budgets $485 of his monthly income for telephone, utilities, and emergencies.

J More than $530 of Oscar's monthly income is for his car payment and car insurance.

---

21 Kiara downloaded 264 pictures from her cell phone to her computer. These pictures took up 528 megabytes of space on her computer. Each picture took up the same amount of space. How many megabytes do 35 of these pictures take up?

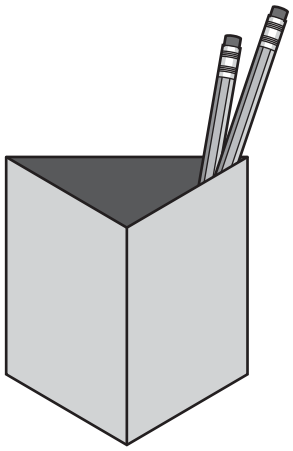
A 18 MB

B 70 MB

C 8 MB

D 23 MB

22 A pencil holder shaped like a triangular prism is shown in the picture. The height of the pencil holder is 12 cm, and the volume of the pencil holder is 216 cm^3.



What is the area of the base of the pencil holder in square centimeters?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

---

23 Stephanie has $3\frac{3}{4}$ bags of soil to put in her garden. Each bag of soil will cover 125.3 ft^2. How many square feet will Stephanie be able to cover if she uses all these bags of soil?

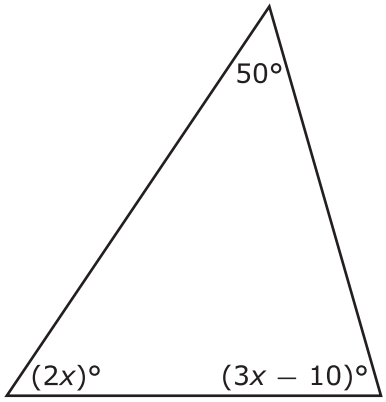
A 469.875 ft^2

B 375.225 ft^2

C 407.225 ft^2

D 418.502 ft^2

24 The angle measures of a triangle are shown in the diagram.



What is the value of x?

F 25

G 20

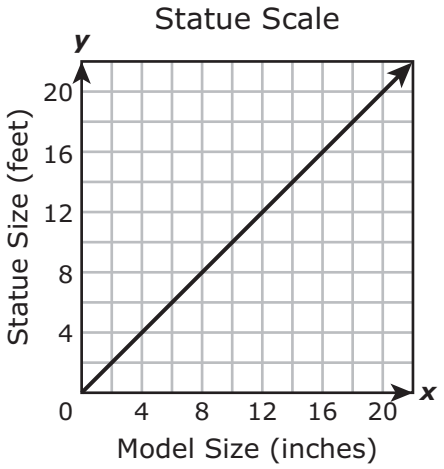
H 10

J 28

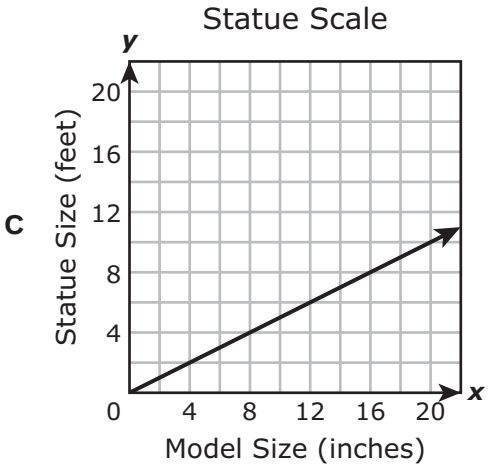
GO ON

25 An artist is making a scale model of a statue. On the model 2 inches represents 1 foot on the actual statue. Which graph best represents this relationship?

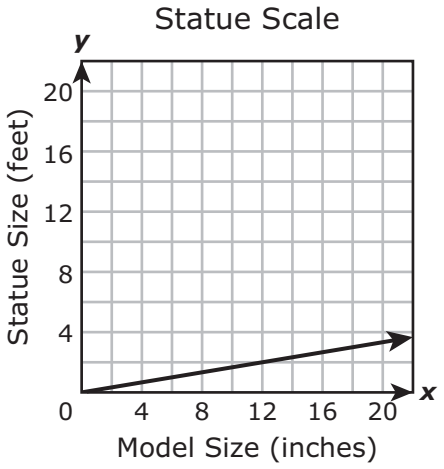
A



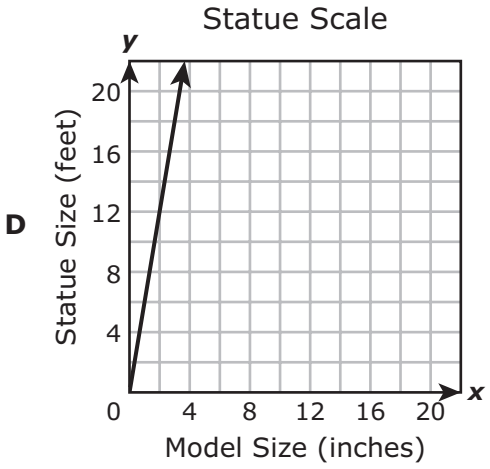
C



B



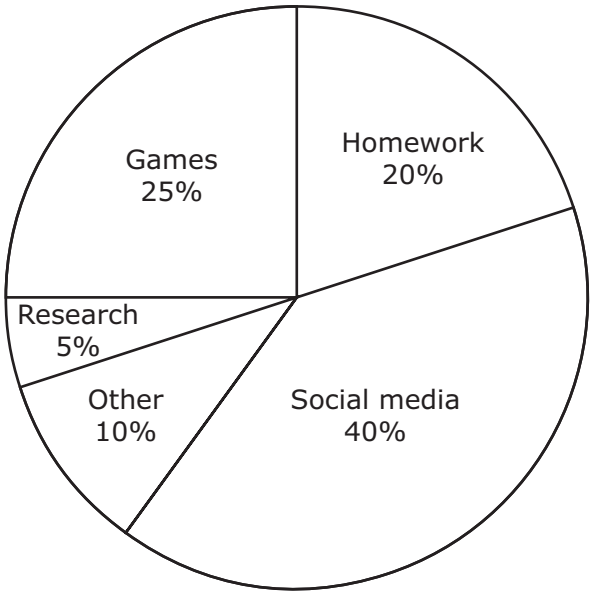
D



GO ON

26 The circle graph shows how Tremaine divided his time on the computer last week.

Tremaine's Computer Time



Tremaine used the computer a total of 30 hours last week. How many more hours did Tremaine use the computer to play games than to do research?

F 6 hours

G 20 hours

H 7.5 hours

J 1.5 hours

27 What is the solution to this equation?

$$30.16 = 17.56 + 5x$$

A 6.032

B 3.512

C 12.6

D 2.52

---

28 Rachel is setting up tables for a party. Four of the tables are covered with red tablecloths, and eight of the tables are covered with white tablecloths. Guests will be randomly seated at the tables when they arrive. Each table can seat 8 guests.

What is the probability that the first guest to arrive will be seated at a table with a red tablecloth?

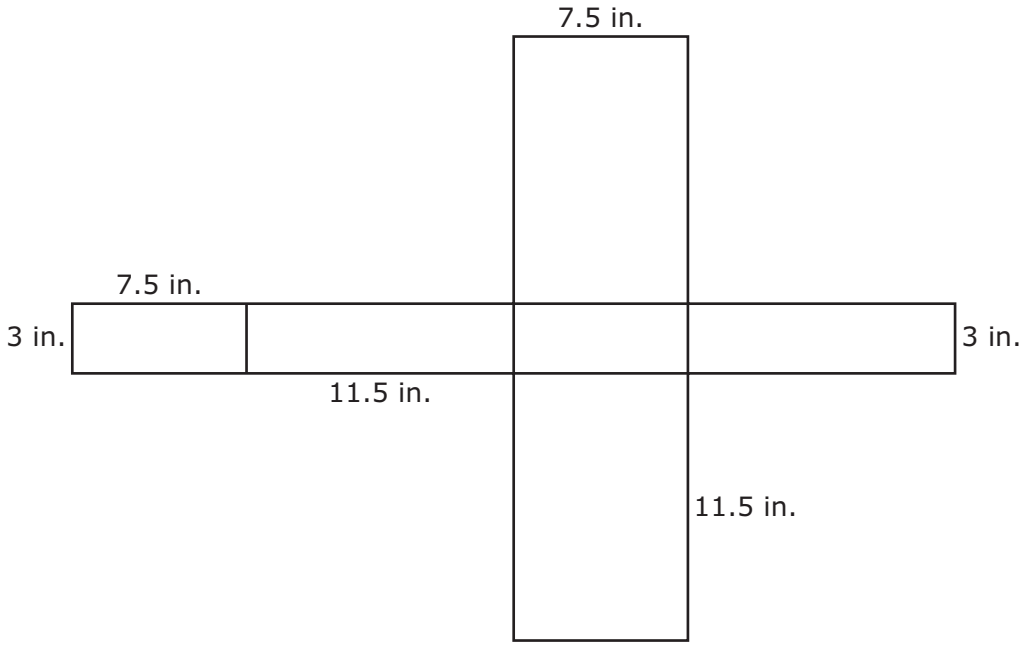
F $\frac{1}{2}$

G $\frac{1}{3}$

H $\frac{1}{4}$

J $\frac{1}{8}$

29 The net of a rectangular prism and its dimensions are shown in the diagram.



What is the total surface area of the rectangular prism in square inches?

A 143.25 in.^{2}

B 241.5 in.^{2}

C 258.75 in.^{2}

D 286.5 in.^{2}

---

30 A doctor has an annual income of $152,125. The income tax the doctor has to pay is 6%. What is the amount of income tax in dollars and cents that the doctor has to pay?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

31 A study of a population of 1,200 frogs revealed that 12 out of every 180 frogs in the population have spots on their back. Based on the results of this study, how many frogs in the population do NOT have spots on their back?

A 80

B 168

C 1,280

D 1,120

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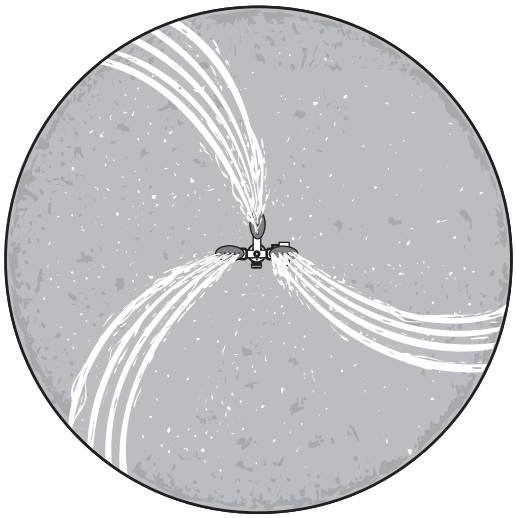
32 A rotating lawn sprinkler sprays water in a circular area of grass, as shown in the picture. The diameter of the circular area of grass is 16 ft.



Which measurement is closest to the area in square feet that this sprinkler sprays with water?

F 100.48 ft^2

G 50.24 ft^2

H 200.96 ft^2

J 803.84 ft^2

33 Which situation can be represented by this inequality?

$$1.25x - 6.50 > 50$$

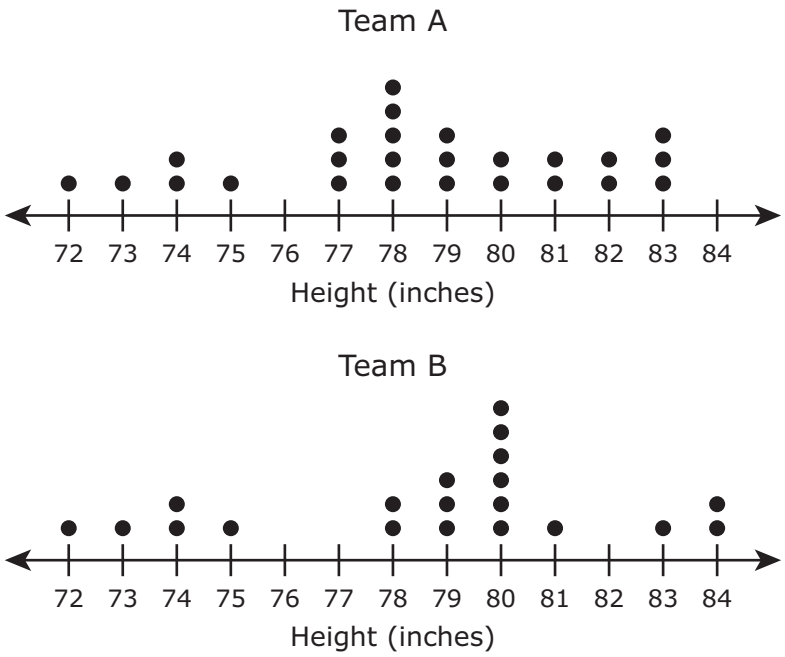
A Stefan spends $6.50 on supplies for a lemonade stand and sells each cup of lemonade for $1.25. What is x, the number of cups of lemonade Stefan must sell to earn a profit of more than $50?

B Stefan has a balance of $6.50 in his savings account and deposits $1.25 each week. What is x, the number of weeks Stefan must deposit $1.25 in order to have a balance of more than $50 in his savings account?

C Stefan earns 1.25% interest on the balance in his checking account and has to pay a monthly charge of $6.50. What is x, the balance that Stefan must have in his checking account in order to have an ending balance greater than $50 after interest and fees?

D Stefan charges $1.25 for gasoline plus $6.50 per hour for mowing lawns. What is x, the number of hours he has to mow lawns to earn more than $50?

34 The dot plots show the heights of the players on two basketball teams.



Which statement is best supported by these data?

F The distributions of the data for Team A and Team B are approximately symmetrical.

G The median height of the players on Team B is less than the median height of the players on Team A.

H Team B has a greater range in player heights than Team A has.

J The mode height of the players on Team B is less than the mode height of the players on Team A.

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35 The distance between two cities on a map is 3.5 centimeters. The map uses a scale in which 1 centimeter represents 20 kilometers. What is the actual distance between these two cities in kilometers?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

36 Rebecca needs $10\frac{1}{2}$ yards of fabric to make a quilt. She has one piece of fabric that is $2\frac{1}{2}$ yards and another piece of fabric that is $4\frac{1}{4}$ yards. How many more yards of fabric does Rebecca need to make the quilt?

F $4\frac{1}{4}$ yd

G $3\frac{1}{4}$ yd

H $3\frac{3}{4}$ yd

J $6\frac{3}{4}$ yd

---

37 Leticia has two bouquets of flowers. Each bouquet contains 13 daisies.

- Bouquet S contains 30 flowers.
- Bouquet T contains 13 flowers.

Which statement is true?

A The probability of randomly selecting a daisy from Bouquet S is less than the probability of randomly selecting a daisy from Bouquet T.

B The probability of randomly selecting a daisy from Bouquet S is 1.

C The probability of randomly selecting a daisy from Bouquet S is equal to the probability of randomly selecting a daisy from Bouquet T.

D The probability of randomly selecting a daisy from Bouquet S is $\frac{1}{3}$.

38 A pilot takes a taxi from the airport to a hotel. The taxi driver charges a $2.50 initial charge plus $2.65 per mile. Which equation can be used to find y, the total cost of the trip, if x represents the number of miles of the trip?

F $y = 2.50x + 2.65$

G $y = 2.65(x + 2.50)$

H $y = 2.65x - 2.50$

J $y = 2.65x + 2.50$

---

39 Mr. Ortiz used similar triangles to make a design. Which statement about the triangles in the design must be true?

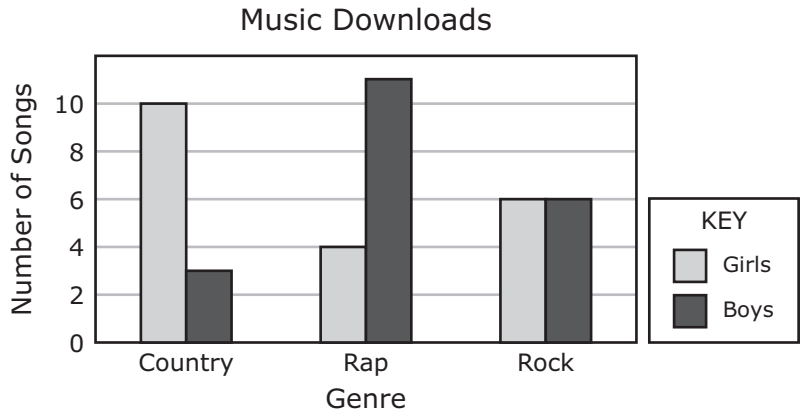
A They are the same size and shape.

B They are the same size but different shapes.

C They have corresponding angles that are congruent.

D They have corresponding sides that are congruent.

40 Parker conducted a random survey at the mall to determine the number of songs in each genre that were downloaded by 40 students. The results are shown in the bar graph.



Based on the information in the graph, which inference about the general population of students is valid?

F Girls like country music more than all other genres combined.

G More girls than boys like rock music.

H Boys like country music more than rock music.

J Boys like rock music more than girls like rap music.

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS ON THE ANSWER DOCUMENT.

STOP

Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Correct Answer
1	1	Readiness	7.6(H)	B
2	3	Readiness	7.5(C)	F
3	2	Supporting	7.11(B)	C
4	3	Readiness	7.9(C)	F
5	2	Readiness	7.3(B)	A
6	4	Readiness	7.12(A)	H
7	2	Supporting	7.10(A)	D
8	3	Readiness	7.9(B)	G
9	2	Readiness	7.4(A)	C
10	3	Supporting	7.4(E)	G
11	1	Readiness	7.6(I)	D
12	2	Supporting	7.4(B)	11.75
13	3	Readiness	7.9(A)	A
14	2	Readiness	7.4(D)	G
15	4	Readiness	7.6(G)	C
16	2	Readiness	7.7(A)	J
17	1	Supporting	7.6(D)	B
18	2	Readiness	7.11(A)	F
19	3	Readiness	7.9(C)	D
20	4	Supporting	7.13(B)	H
21	2	Readiness	7.4(D)	B
22	3	Readiness	7.9(A)	18
23	2	Supporting	7.3(A)	A
24	3	Supporting	7.11(C)	J
25	2	Readiness	7.4(A)	C
26	4	Readiness	7.6(G)	F
27	2	Readiness	7.11(A)	D
28	1	Readiness	7.6(I)	G
29	3	Supporting	7.9(D)	D
30	4	Supporting	7.13(A)	9127.50
31	1	Supporting	7.6(C)	D
32	3	Readiness	7.9(B)	H
33	2	Supporting	7.10(C)	A
34	4	Readiness	7.12(A)	H
35	3	Readiness	7.5(C)	70
36	2	Readiness	7.3(B)	H
37	1	Readiness	7.6(H)	A
38	2	Readiness	7.7(A)	J
39	3	Supporting	7.5(A)	C
40	4	Supporting	7.12(C)	J

2017 STAAR Grade 7 Math Rationales

Item #	Response A/F	Response B/G	Response C/H	Response D/J
1	A is incorrect because 15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is more than 50 seeds.	B is correct because15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is between 50 and 100 seeds.	C is incorrect because 15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is not between 100 and 120 seeds.	D is incorrect because 15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is not all 120 seeds.
2	F is correct because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5.	G is incorrect because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5, not 8.	H is incorrect because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5, not 10.8.	J is incorrect because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5, not 30.
3	A is incorrect because 3(20 - 14) = 18, not 44.	B is incorrect because 3(12 - 14) = -6, not 6.	C is correct because 2(14 - 3) = 22.	D is incorrect because 2(14) - 3 = 25, not 22.
4	F is correct because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272.	G is incorrect because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272, not 374.	H is incorrect because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272, not 102.	J is incorrect because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272, not 59.
5	A is correct because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56.	B is incorrect because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56, not 6.44.	C is incorrect because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56, not 5.25.	D is incorrect because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56, not 4.75.
6	F is incorrect because the range of the data for Farm Y, which is 30 - 5 = 25, is less than the range of the data for Farm X, which is 35 - 4 = 31.	G is incorrect because the third quartile of the data for Farm Y, which is 27, is greater than the third quartile of the data for Farm X, which is 24.	H is correct because the median of the data for Farm Y, which is 18, is greater than the median of the data for Farm X, which is 17.	J is incorrect because the first quartile of the data for Farm Y, which is 12, is less than the first quartile of the data for Farm X, which is 15.
7	A is incorrect because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750, not 200w + 25 < 750.	B is incorrect because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750, not 25w + 200 < 750.	C is incorrect because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750, not 200w + 25 > 750.	D is correct because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750.
8	F is incorrect because the formula for the circumference of a circle is C = 2πr, so C = 2(π)(2.5) ≈ 2(3.14)(2.5) = 15.7, not 7.85.	G is correct because the formula for the circumference of a circle is C = 2πr, so C = 2(π)(2.5) ≈ 2(3.14)(2.5) = 15.7.	H is incorrect because the formula for the circumference of a circle is C = 2πr, so C = 2(π)(2.5) ≈ 2(3.14)(2.5) = 15.7, not 19.63.	J is incorrect because the formula for the circumference of a circle is C = 2πr, so C = 2(π)(2.5) ≈ 2(3.14)(2.5) = 15.7, not 31.4.
9	A is incorrect because d = 55*t* does represent a car traveling at 55 miles per hour.	B is incorrect because the table shows values of time and distance that do represent a car traveling at 55 miles per hour.	C is correct because a car traveling 160 miles in 3 hours does NOT represent a car traveling at 55 miles per hour.	D is incorrect because the graph does represent a car traveling at 55 miles per hour.

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Item #	Response A/F	Response B/G	Response C/H	Response D/J
10	F is incorrect because 3 liters = 3,000 milliliters and if there are 29.6 milliliters in 1 fluid ounce, then the number of fluid ounces is 3,000/29.6, which is closest to 101, not 89.	G is correct because 3 liters = 3,000 milliliters and if there are 29.6 milliliters in 1 fluid ounce, then the number of fluid ounces is 3,000/29.6, which is closest to 101.	H is incorrect because 3 liters = 3,000 milliliters and if there are 29.6 milliliters in 1 fluid ounce, then the number of fluid ounces is 3,000/29.6, which is closest to 101, not 10.	J is incorrect because 3 liters = 3,000 milliliters and if there are 29.6 milliliters in 1 fluid ounce, then the number of fluid ounces is 3,000/29.6, which is closest to 101, not 33.
11	A is incorrect because there are 5 blue out of 15 total marbles in the first bag and 2 blue out of 9 total marbles in the second bag, so (5/15)(2/9) = 10/135, which simplifies to 2/27, not 5/9.	B is incorrect because there are 5 blue out of 15 total marbles in the first bag and 2 blue out of 9 total marbles in the second bag, so (5/15)(2/9) = 10/135, which simplifies to 2/27, not 1/135.	C is incorrect because there are 5 blue out of 15 total marbles in the first bag and 2 blue out of 9 total marbles in the second bag, so (5/15)(2/9) = 10/135, which simplifies to 2/27, not 1/6.	D is correct because there are 5 blue out of 15 total marbles in the first bag and 2 blue out of 9 total marbles in the second bag, so (5/15)(2/9) = 10/135, which simplifies to 2/27.
12	F; 11.75 is correct because 47.00 ÷ 4 = 11.75.	G; Students may have multiplied 47.00 x 4 = 188.		
13	A is correct because the formula for volume of a rectangular prism is V = Bh, so V = (3)(3)(3) = 27 for each cube, and the combined volume of the two number cubes is 54.	B is incorrect because the formula for volume of a rectangular prism is V = Bh, so V = (3)(3)(3) = 27 for each cube, and the combined volume of the two number cubes is 54, not 18.	C is incorrect because the formula for volume of a rectangular prism is V = Bh, so V = (3)(3)(3) = 27 for each cube, and the combined volume of the two number cubes is 54, not 9.	D is incorrect because the formula for volume of a rectangular prism is V = Bh, so V = (3)(3)(3) = 27 for each cube, and the combined volume of the two number cubes is 54, not 27.
14	F is incorrect because the price was reduced by $15, and 15/60 is 25%, not 15%.	G is correct because the price was reduced by $15, and 15/60 is 25%.	H is incorrect because the price was reduced by $15, and 15/60 is 25%, not 75%.	J is incorrect because the price was reduced by $15, and 15/60 is 25%, not 40%.
15	A is incorrect because (9 + 4 + 3)/50 = 16/50 = 32% of students chose red, yellow, or orange as their favorite color, which is more than 30%.	B is incorrect because 4/50 = 8% of students chose pink as their favorite color, which is less than 1/10 = 10%.	C is correct because 9/50 = 18% of students chose blue as their favorite color.	D is incorrect because (7 + 8 + 6)/50 = 42% of students chose blue as their favorite color, not 2/5 = 40%.
16	F is incorrect because using the equation y = 5x does not generate the correct y values in the table.	G is incorrect because using the equation y = x + 5 does not generate the correct y values in the table.	H is incorrect because using the equation y = x + 470 does not generate the correct y values in the table.	J is correct because using the equation y = 94x generates the correct y values in the table.
17	A is incorrect because the spinner can land on an even number 3 times out of 8. So 3/8 multiplied by 120 times equals 45, not 75.	B is correct because the spinner can land on an even number 3 times out of 8. So 3/8 multiplied by 120 times equals 45.	C is incorrect because the spinner can land on an even number 3 times out of 8. So 3/8 multiplied by 120 times equals 45, not 15.	D is incorrect because the spinner can land on an even number 3 times out of 8. So 3/8 multiplied by 120 times equals 45, not 40.
18	F is correct because the model represents 4x + 12 ≤ -8, so 4x ≤ -20, and dividing both sides by 4 simplifies to x ≤ -5.	G is incorrect because the model represents 4x + 12 ≤ -8, so 4x ≤ -20, and dividing both sides by 4 simplifies to x ≤ -5, not x ≤ 5.	H is incorrect because the model represents 4x + 12 ≤ -8, so 4x ≤ -20, and dividing both sides by 4 simplifies to x ≤ -5, not x ≤ 1.	J is incorrect because the model represents 4x + 12 ≤ -8, so 4x ≤ -20, and dividing both sides by 4 simplifies to x ≤ -5, not x ≤ -14.

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Item #	Response A/F	Response B/G	Response C/H	Response D/J
19	A is incorrect because the area of the semicircle + triangle is A = $(1/2)(\pi)(4)^2$ + $(1/2)(7)(8) \approx (1/2)(3.14)(4)^2$ + $(1/2)(7)(8) = 53$, not 78.	B is incorrect because the area of the semicircle + triangle is A = $(1/2)(\pi)(4)^2$ + $(1/2)(7)(8) \approx (1/2)(3.14)(4)^2$ + $(1/2)(7)(8) = 53$, not 81.	C is incorrect because the area of the semicircle + triangle is A = $(1/2)(\pi)(4)^2$ + $(1/2)(7)(8) \approx (1/2)(3.14)(4)^2$ + $(1/2)(7)(8) = 53$, not 106.	D is correct because the area of the semicircle + triangle is A = $(1/2)(\pi)(4)^2$ + $(1/2)(7)(8) \approx (1/2)(3.14)(4)^2$ + $(1/2)(7)(8) = 53$.
20	F is incorrect because the monthly savings is 16% of 2,250, which is 360, so the statement is true.	G is incorrect because 35% of 2,250 is 787.5 and 3% of 2,250 is 67.5 for a total of 855, which is less than 900, so the statement is true.	H is correct because 5% of 2,250 is 112.5, 6% of 2,250 is 135, and 11% of 2,250 is 247.5 for a total of 495, not 485, so the statement is NOT true.	J is incorrect because 17.5% of 2,250 is 393.75 and 6.5% of 2,250 is 146.25 for a total of 540, which is more than 530, so the statement is true.
21	A is incorrect because the number of megabytes can be found using the proportion 264/528 = 35/x, which simplifies to x = 70, not 18.	B is correct because the number of megabytes can be found using the proportion 264/528 = 35/x, which simplifies to x = 70.	C is incorrect because the number of megabytes can be found using the proportion 264/528 = 35/x, which simplifies to x = 70, not 8.	D is incorrect because the number of megabytes can be found using the proportion 264/528 = 35/x, which simplifies to x = 70, not 23.
22	F; 18 is correct because the formula for volume of a triangular prism is V = Bh, so the area of the base can be found using B(12) = 216, and dividing both sides by 12 simplifies to B = 18.	G; Students may have multiplied 216(12) = 2,592, instead of dividing 216 by 12.		
23	A is correct because 3 3/4 bags times 125.3 square feet = 3.75(125.3) = 469.875.	B is incorrect because 3 3/4 bags times 125.3 square feet = 3.75(125.3) = 469.875, not 375.225.	C is incorrect because 3 3/4 bags times 125.3 square feet = 3.75(125.3) = 469.875, not 407.225.	D is incorrect because 3 3/4 bags times 125.3 square feet = 3.75(125.3) = 469.875, not 418.502.
24	F is incorrect because 2x + (3x - 10) + 50 = 180, which simplifies to 5x = 140, and dividing both sides by 5 simplifies to x = 28, not 25.	G is incorrect because 2x + (3x - 10) + 50 = 180, which simplifies to 5x = 140, and dividing both sides by 5 simplifies to x = 28, not 20.	H is incorrect because 2x + (3x - 10) + 50 = 180, which simplifies to 5x = 140, and dividing both sides by 5 simplifies to x = 28, not 10.	J is correct because 2x + (3x - 10) + 50 = 180, which simplifies to 5x = 140, and dividing both sides by 5 simplifies to x = 28.
25	A is incorrect because the graph shows that every 4 feet on the statue is equal to 4 inches on the model.	B is incorrect because the graph shows that every 2 feet on the statue is equal to 12 inches on the model.	C is correct because the graph shows that every 1 foot on the statue is equal to 2 inches on the model.	D is incorrect because the graph shows that every 12 feet on the statue is equal to 2 inches on the model.
26	F is correct because 25% of 30, which is 7.5, is used on games and 5% of 30, which is 1.5, is used on research. The difference in hours is 7.5 - 1.5 = 6.	G is incorrect because 25% of 30, which is 7.5, is used on games and 5% of 30, which is 1.5, is used on research. The difference in hours is 7.5 - 1.5 = 6, not 20.	H is incorrect because 25% of 30, which is 7.5, is used on games and 5% of 30, which is 1.5, is used on research. The difference in hours is 7.5 - 1.5 = 6, not 7.5.	J is incorrect because 25% of 30, which is 7.5, is used on games and 5% of 30, which is 1.5, is used on research. The difference in hours is 7.5 - 1.5 = 6, not 1.5.
27	A is incorrect because 30.16 = 17.56 + 5x, which simplifies to 12.6 = 5x, and dividing both sides by 5 simplifies to x = 2.52, not 6.032.	B is incorrect because 30.16 = 17.56 + 5x, which simplifies to 12.6 = 5x, and dividing both sides by 5 simplifies to x = 2.52, not 3.512.	C is incorrect because 30.16 = 17.56 + 5x, which simplifies to 12.6 = 5x, and dividing both sides by 5 simplifies to x = 2.52, not 12.6.	D is correct because 30.16 = 17.56 + 5x, which simplifies to 12.6 = 5x, and dividing both sides by 5 simplifies to x = 2.52.

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Item #	Response A/F	Response B/G	Response C/H	Response D/J
28	F is incorrect because there are 32 possible seats at tables with red tablecloths out of a total of 96 possible seats. The probability is 32/96 = 1/3, not 1/2.	G is correct because there are 32 possible seats at tables with red tablecloths out of a total of 96 possible seats. The probability is 32/96 = 1/3.	H is incorrect because there are 32 possible seats at tables with red tablecloths out of a total of 96 possible seats. The probability is 32/96 = 1/3, not 1/4.	J is incorrect because there are 32 possible seats at tables with red tablecloths out of a total of 96 possible seats. The probability is 32/96 = 1/3, not 1/8.
29	A is incorrect because the total surface area is the sum of all the rectangular areas found in the net which is 2(7.5)(11.5) + 2(3)(7.5) + 2(3)(11.5) = 286.5, not 143.25.	B is incorrect because the total surface area is the sum of all the rectangular areas found in the net which is 2(7.5)(11.5) + 2(3)(7.5) + 2(3)(11.5) = 286.5, not 241.5.	C is incorrect because the total surface area is the sum of all the rectangular areas found in the net which is 2(7.5)(11.5) + 2(3)(7.5) + 2(3)(11.5) = 286.5, not 258.75.	D is correct because the total surface area is the sum of all the rectangular areas found in the net which is 2(7.5)(11.5) + 2(3)(7.5) + 2(3)(11.5) = 286.5.
30	F; 9127.50 is correct because 6% of 152,125 is (0.06)(152,125) = 9,127.5.	G; Students may have placed the decimal point incorrectly in the grid as 912.75.		
31	A is incorrect because 180 - 12 frogs do not have spots, so using the proportion 168/180 = x/1,200, which simplifies to x = 1,120, not 80.	B is incorrect because 180 - 12 frogs do not have spots, so using the proportion 168/180 = x/1,200, which simplifies to x = 1,120, not 168.	C is incorrect because 180 - 12 frogs do not have spots, so using the proportion 168/180 = x/1,200, which simplifies to x = 1,120, not 1,280.	D is correct because 180 - 12 frogs do not have spots, so using the proportion 168/180 = x/1,200, which simplifies to x = 1,120.
32	F is incorrect because the formula for area of a circle is $A = \pi r^2$, so $A = \pi(8)^2 \approx (3.14)(8)^2 = 200.96$, not 100.48.	G is incorrect because the formula for area of a circle is $A = \pi r^2$, so $A = \pi(8)^2 \approx (3.14)(8)^2 = 200.96$, not 50.24.	H is correct because the formula for area of a circle is $A = \pi r^2$, so $A = \pi(8)^2 \approx (3.14)(8)^2 = 200.96$.	G is incorrect because the formula for area of a circle is $A = \pi r^2$, so $A = \pi(8)^2 \approx (3.14)(8)^2 = 200.96$, not 803.84.
33	A is correct because 1.25 each for x cups of lemonade minus 6.50 for supplies is more than 50; this can be represented by 1.25x - 6.50 > 50.	B is incorrect because 1.25 each for x cups of lemonade minus 6.50 for supplies is more than 50, this can be represented by 1.25x - 6.50 > 50, not 1.25x + 6.50 > 50.	C is incorrect because 1.25 each for x cups of lemonade minus 6.50 for supplies is more than 50; this can be represented by 1.25x - 6.50 > 50, not 1.0125x - 6.50 > 50.	D is incorrect because 1.25 each for x cups of lemonade minus 6.50 for supplies is more than 50, this can be represented by 1.25x - 6.50 > 50, not 1.25 + 6.50x > 50.
34	F is incorrect because the distribution of the data for Team A and Team B are not approximately symmetrical.	G is incorrect because the median height of the players on Team B, which is 79, is greater than the median height of the players on Team A, which is 78.	H is correct because the range of player heights on Team B, which is 12, is greater than the range of player heights on Team A, which is 11.	J is incorrect because the mode height of the players on Team B, which is 80, is greater than the mode height of the players on Team A, which is 78.
35	A; 70 is correct because if 1 centimeter represents 20 kilometers, then 3.5(20) = 70.	B; Students may have multiplied 3.5(20) incorrectly to get 60.5.		
36	F is incorrect because the amount of fabric can be found using 10 ½ - (2 ½ + 4 ¼) = 3 ¾, not 4 ¼.	G is incorrect because the amount of fabric can be found using 10 ½ - (2 ½ + 4 ¼) = 3 ¾, not 3 ¼.	H is correct because the amount of fabric can be found using 10 ½ - (2 ½ + 4 ¼) = 3 ¾.	J is incorrect because the amount of fabric can be found using 10 ½ - (2 ½+ 4 ¼) = 3 ¾, not 6 ¾.

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37	A is correct because the probability of randomly selecting a daisy from Bouquet S, which is 13/30, is less than the probability of selecting a daisy from Bouquet T, which is 13/13 or 1.	B is incorrect because the probability of selecting a daisy in Bouquet S is 13/30, not 1.	C is incorrect because the probability of randomly selecting a daisy from Bouquet S, which is 13/30, is not equal to the probability of selecting a daisy from Bouquet T, which is 13/13 or 1.	D is incorrect because the probability of randomly selecting a daisy from Bouquet S is 13/30, not 1/3.
38	F is incorrect because the total cost of the trip, y, is equal to the initial charge of 2.50 plus 2.65 multiplied by the number of miles, x. This situation is represented by the equation y = 2.65x + 2.50, not y = 2.50x + 2.65.	G is incorrect because the total cost of the trip, y, is equal to the initial charge of 2.50 plus 2.65 multiplied by the number of miles, x. This situation is represented by the equation y = 2.65x + 2.50, not y = 2.65(x + 2.50).	H is incorrect because the total cost of the trip, y, is equal to the initial charge of 2.50 plus 2.65 multiplied by the number of miles, x. This situation is represented by the equation y = 2.65x + 2.50, not y = 2.65x - 2.50.	J is correct because the total cost of the trip, y, is equal to the initial charge of 2.50 plus 2.65 multiplied by the number of miles, x. This situation is represented by the equation y = 2.65x + 2.50.
39	A is incorrect because similar figures are not necessarily the same size, but are the same shape.	B is incorrect because similar figures are not necessarily the same size, but are the same shape.	C is correct because the corresponding angles in similar figures are congruent.	D is incorrect because the lengths of corresponding sides in similar figures are proportional.
40	F is incorrect because the number of girls who like country music, which is 10, is equal to the number of girls who like rap and rock music combined, which is 4 + 6 = 10.	G is incorrect because the number of girls who like rock music, which is 6, is equal to the number of boys who like rock music, which is 6.	H is incorrect because the number of boys who like country music, which is 3, is less than the number of boys who like rock music, which is 6.	J is correct because the number of boys who like rock music, which is 6, is more than the number of girls who like rap music, which is 4.