Directions: Answer the following question(s).

1 **What is the value of the following expression?**

$$\frac{(-81)}{(-9)}$$

A. –90
B. –9
C. 9
D. 90

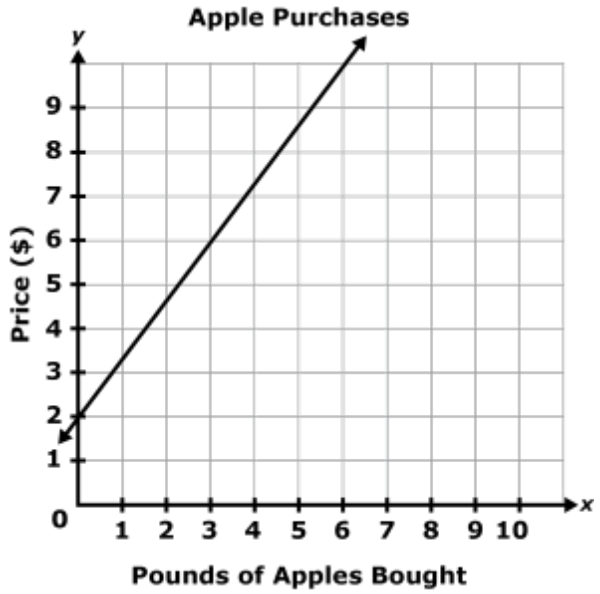
2 **What is the difference in elevation between city #2 and #4?**

City	Elevation
City #1	28 feet below sea level
City #2	42 feet below sea level
City #3	37 feet above sea level
City #4	49 feet above sea level

A. 6 feet
B. 7 feet
C. 81 feet
D. 91 feet

Directions: Answer the following question(s).

3 **Does this graph show a proportional relationship between the pounds of apples bought and the price?**



A. Yes, because the line on the graph is straight.
B. Yes, because the line moves through the *y*–axis.
C. No, because the line does not pass through the origin.
D. No, because the line does not give a *y*–value for every *x*–value.

4 **Select *all* tables that represent a proportional relationship between *x* and *y*.**

A.

x	–2	0	3	5
y	–6	0	9	15

B.

x	0	1	2	3
y	4	5	6	7

C.

x	–8	–6	–4	–2
y	–9	–7	–5	–3

D.

x	2	6	7	10
y	8	24	28	40

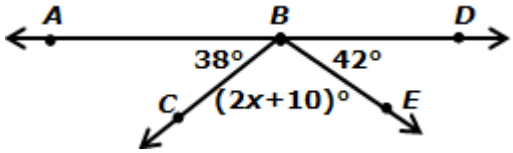
E.

x	0	5	10	15
y	10	15	20	25

5 **Walt is buying a bicycle that regularly costs $120. It is on sale for 15% off. If the tax rate is 8%, what is the sale price of the bicycle including tax?**

A. $102.08
B. $110.16
C. $111.60
D. $149.04

6 **In the figure below, $m\angle ABC = 38°$ and $m\angle DBE = 42°$. Solve for *x* and find the measure of $\angle CBE$.**



A. $x = 35$; $\angle CBE = 80°$
B. $x = 40$; $\angle CBE = 90°$
C. $x = 45$; $\angle CBE = 100°$
D. $x = 85$; $\angle CBE = 180°$

7 **If 25% of a number is 35, what is 40% of the number?**

A. 8.75
B. 28.57
C. 56
D. 140

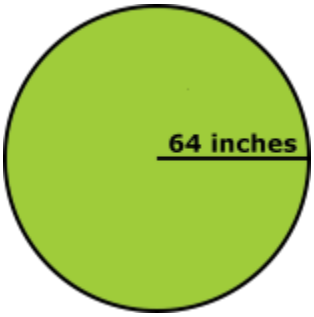
8 **What is the constant of proportionality in the table below?**

Hours	3	5	7	9
Wages	$38.25	$63.75	$89.25	$114.75

A. $2/hour
B. $12.75/hour
C. $25.50/hour
D. $191.25/hour

Directions: Answer the following question(s).

9 **This circle has a radius of 64 inches.**



Which expression could be used to find the area of this circle?

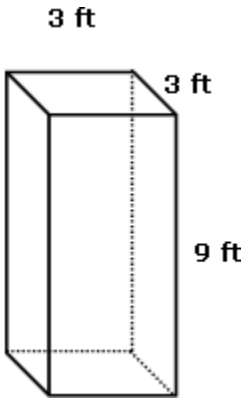
A. $2 \times 8 \times \pi$

B. $2 \times 64 \times \pi$

C. $8^2 \times \pi$

D. $64^2 \times \pi$

10 **What is the total surface area of the rectangular prism?**



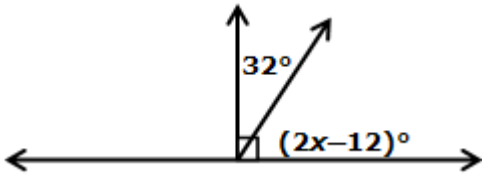
A. 81 ft^2

B. 117 ft^2

C. 126 ft^2

D. 162 ft^2

11 **Solve for *x*.**



A. $x = 35$

B. $x = 51$

C. $x = 80$

D. $x = 96$

12 **Raphael went to the store and bought $2\frac{1}{2}$ pounds of chicken for $9.00. What was the cost per pound of the chicken? Round your answer to the nearest *cent*, if necessary.**

A. $0.28

B. $3.60

C. $22.50

D. $360.00

13 **Select *all* values equal to $-\frac{7}{9}$.**

A. $\frac{-7}{-9}$

B. $-\left(\frac{-7}{-9}\right)$

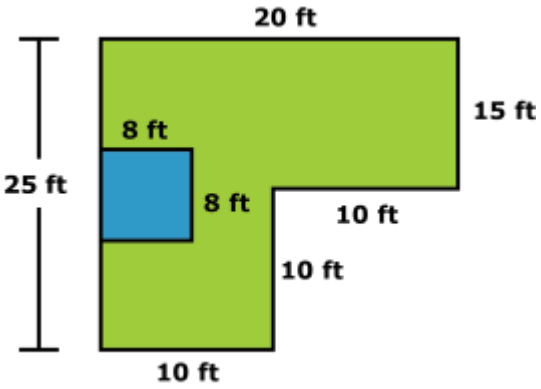
C. $-\left(\frac{-7}{9}\right)$

D. $\frac{7}{-9}$

E. $-\left(\frac{7}{-9}\right)$

Directions: Answer the following question(s).

14 **Phillip is mowing his backyard. His backyard is oddly shaped.**



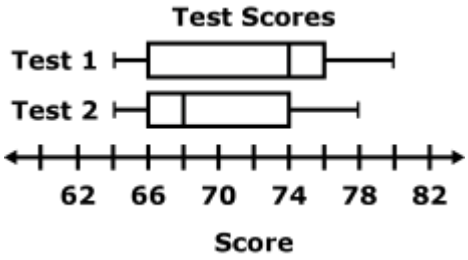
Phillip has an 8 ft by 8 ft pond in his backyard. What is the total area that Phillip will be mowing?

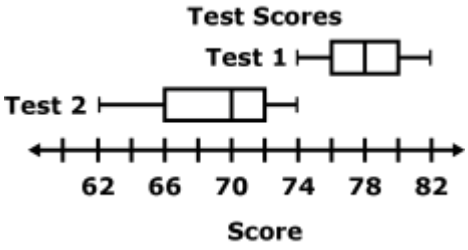
A. 64 square feet
B. 106 square feet
C. 336 square feet
D. 400 square feet

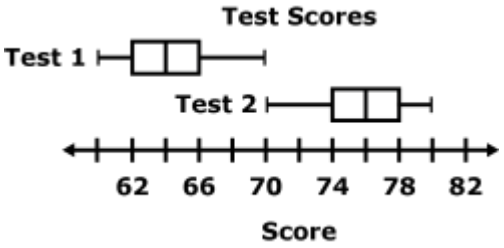
15 $(4)(-5)\left(\frac{2}{3}\right)=$

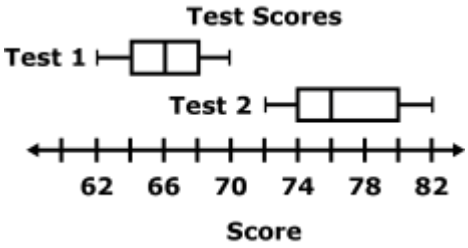
A. –40
B. $-13\frac{1}{3}$
C. $-\frac{1}{3}$
D. $9\frac{2}{3}$

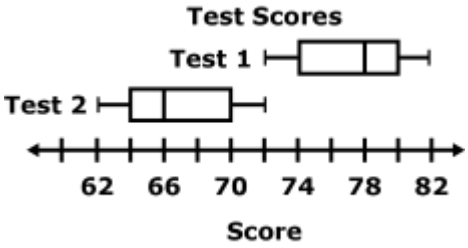
16 **Which of the box plots demonstrates a difference in median between Test 1 and Test 2 of greater than 10? Select *all* that apply.**

A.


B.


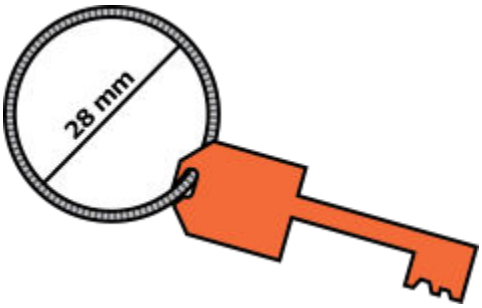
C.


D.


E.


Directions: Answer the following question(s).

17 **A circular key ring has a diameter of 28 millimeters (mm).**



Which measure is *closest* to the circumference of the ring?

A. 31.4 mm
B. 44.0 mm
C. 88.0 mm
D. 616.0 mm

18 **How do you write the fraction $\frac{5}{8}$ as a decimal?**

A. .0625
B. .16
C. .625
D. 1.6

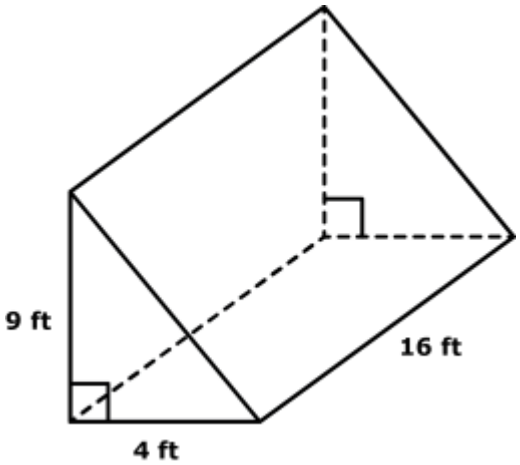
19 **Bethany is baking cookies for her school's bake sale. She plans to bake more than 185 cookies, in batches of 12 cookies. So far, Bethany has baked a total of 48 cookies. What inequality describes this situation, if *b* represents the number of batches of cookies Bethany has left to bake?**

A. $185 > 48 + 12b$
B. $185 < 48 + 12b$
C. $185 > 12 + 48b$
D. $185 < 12 + 48b$

20 **Select the expression equivalent to $(-18x - 12) - (-13x + 17)$.**

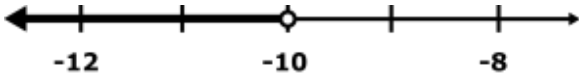
A. $31x - 29$
B. $-5x - 29$
C. $-5x + 5$
D. $5x + 5$

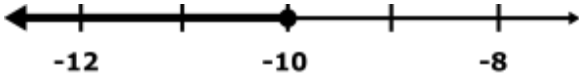
21 **What is the volume of this triangular prism?**

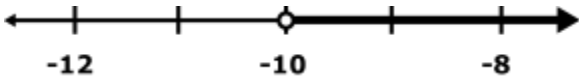


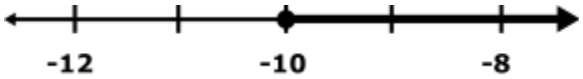
A. 576 ft^3
B. 288 ft^3
C. 34 ft^3
D. 29 ft^3

22 **Which number line shows the solution to the inequality $5x - 15 > -65$?**

A.


B.


C.


D.


Directions: Answer the following question(s).

23 **Select the expression equivalent to (8.4*x* + 2.9) + (–3.7*x* + 5).**

A. –4.7*x* + 7.9
B. 4.7*x* + 7.9
C. –12.1*x* + 7.9
D. 12.1*x* + 7.9

24 **What value of *y* makes the equation below true?**

2*y* – 25 = 19

A. 44
B. 22
C. –3
D. –6

25 **Which is *closest* to the circumference of the circle below?**

A. 14.13 cm
B. 28.26 cm
C. 63.59 cm
D. 254.34 cm

26 **Rosario is rolling a six–sided number cube. Rosario rolls the number cube twice. What is the probability that Rosario gets the number one twice in a row?**

A. $\frac{1}{36}$
B. $\frac{1}{6}$
C. $\frac{1}{3}$
D. 1

27 **A taxi cab company charges $8.00 per ride plus $0.75 for each mile driven. Which equation models the total cost (*c*), in dollars, of a taxi cab ride, where *m* is the number of miles driven?**

A. *c* = 8*m* + .75
B. *c* = 8.75*m* + .75
C. *c* = .75*m* + 8
D. *c* = .75*m* + 8.75

28 **Simplify:**

8*x* + 3(*x* + 5) – 5(*x* – 4)

A. 6*x* + 35
B. 6*x* + 1
C. 6*x* – 5
D. 43*x*

Directions: Answer the following question(s).

29 **What is the area, in square units, of trapezoid *AEDC* shown below?**

A. 192 units^2
B. 264 units^2
C. 274 units^2
D. 288 units^2

30 **Which of the following inequalities are true when $x = 6$? Select *all* that apply.**

A. $2x + 4 \geq 14$
B. $5x < 50$
C. $6x + 6 < 24$
D. $8 + 3x < 32$
E. $6x \leq 36$

31 **Greg's soccer team is selling sets of 3 raffle tickets for $5.00. What is the constant of proportionality of dollars per ticket?**

A. $15.00 per ticket
B. $5.00 per ticket
C. $1.67 per ticket
D. $0.60 per ticket

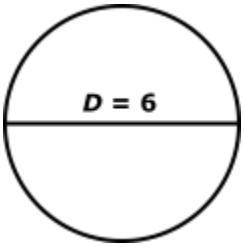
32 **Which of the following expressions is equivalent to $19 \times \left(4\frac{3}{5} - 2.75 \right) - 12\frac{1}{2}$?**

A. $12.5 - 19 \times (1.85)$
B. $-12.5 + 19 \times (1.85)$
C. $19 \times \left(4\frac{3}{5} - 2\frac{2}{4} \right) - 12.5$
D. $-12.5 + (19 - 1.85)$

Directions: Answer the following question(s).

33

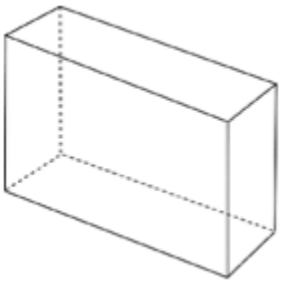
34 **Look at the circle below.**



What is the area of the circle if the diameter is 6 centimeters? Use 3.14 for pi.

A. 18.84 square centimeters
B. 28.26 square centimeters
C. 37.68 square centimeters
D. 113.04 square centimeters

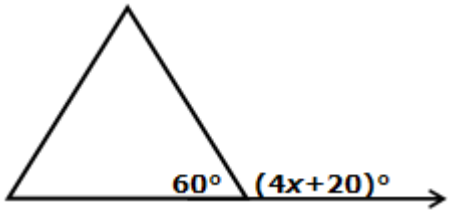
35 **This figure is a rectangular prism.**



Select *all* figures that cannot be formed by a vertical slice perpendicular to the base.

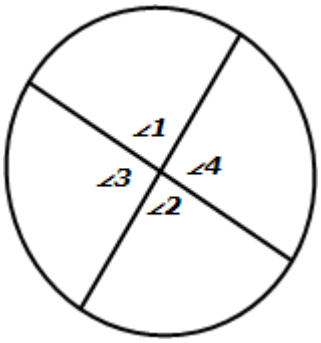
A. line segment
B. rectangle
C. equilateral triangle
D. trapezoid

36 **Solve for *x* and then determine the measure of the exterior angle.**



A. $x = 10$; 60°
B. $x = 25$; 120°
C. $x = 40$; 180°
D. $x = 85$; 360°

37 **In the diagram below, $m\angle 1$ is 10° less than $m\angle 3$. Find the measures of ∠1, ∠2, ∠3 and ∠4.**



A. $m\angle 1 = 90°$; $m\angle 2 = 90°$; $m\angle 3 = 90°$; $m\angle 4 = 90°$
B. $m\angle 1 = 75°$; $m\angle 2 = 75°$; $m\angle 3 = 85°$; $m\angle 4 = 85°$
C. $m\angle 1 = 85°$; $m\angle 2 = 95°$; $m\angle 3 = 85°$; $m\angle 4 = 95°$
D. $m\angle 1 = 85°$; $m\angle 2 = 85°$; $m\angle 3 = 95°$; $m\angle 4 = 95°$

38 **Angle *B* and angle *C* are complementary. If angle *B* is five times the size of angle *C* which equation can be used to find the measure of angle *C*?**

A. $5x + x = 180$
B. $5x = 180$
C. $5x + x = 90$
D. $5x = 90$

Directions: Answer the following question(s).

39 **Peter wants to pick two things to do on his day off. Peter is very organized so he made a table of possible choices.**

Dinner (per person)	Activity (per person)
Fast food – $7	Football game – $45
Casual dining – $15	Movies – $11
Buffet – $10	Bowling – $8
	Paint Ball – $25

If he picks one event from each category (Dinner and Activity), what is the probability that he will spend under $25?

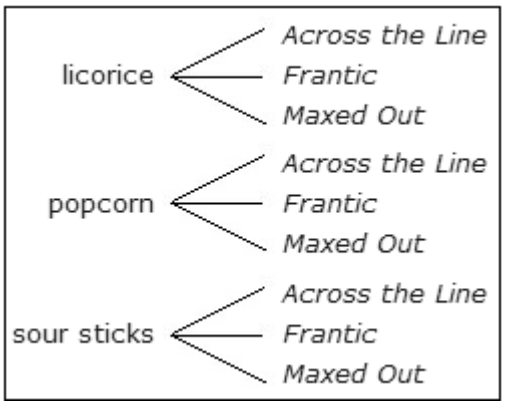
A. 5%
B. 42%
C. 50%
D. 71%

40 **Fred's parents took him to a video store and told him he could get one snack food and one movie. The movies and snacks he can choose from are listed below.**

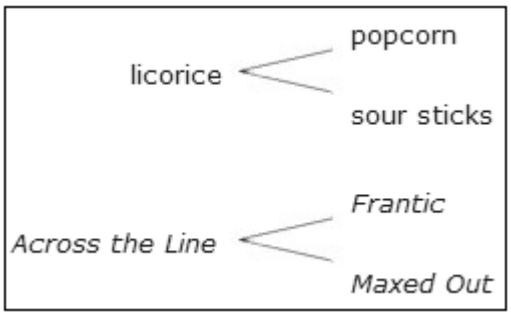
Snacks	Movies
licorice	*Across the Line*
popcorn	*Frantic*
sour sticks	*Maxed Out*

Which of the following diagrams correctly shows all of Fred's choices of combinations?

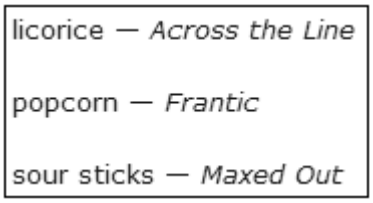
A.



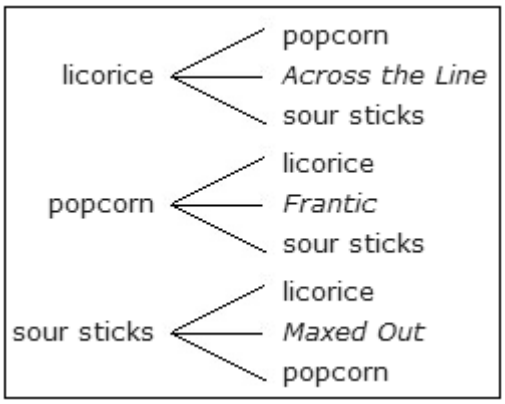
B.



C.



D.



Directions: Answer the following question(s).

41 **Ms. Nash, an executive with a television company, is trying to decide on the subject matter for a new television series for adults. She chooses to conduct a survey to help her make an informed decision. Which of the following sampling techniques should Ms. Nash use in order to obtain the most representative sample of the viewing audience?**

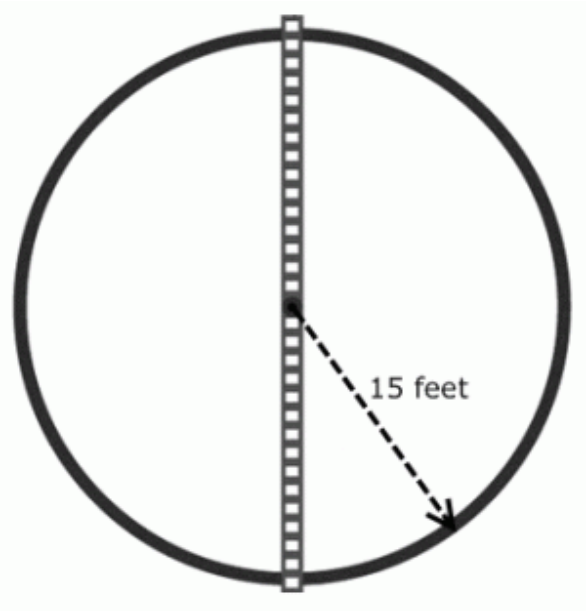
A. Ms. Nash should ask a randomly–chosen, equal number of men and women shopping at a department store.

B. Ms. Nash should ask five men and five women shopping at a local grocery store.

C. Ms. Nash should ask men and women from a variety of age ranges who are attending a science fiction movie festival.

D. Ms. Nash should ask the first two hundred men she encounters on the busy street in front of her office.

42 **Which equation could be used to find the outer circumference, in feet, of the face off circle at center ice in a hockey rink if the outer radius of the circle is 15 feet?**



A. $C = \pi \times 15$

B. $C = \pi \times 30^2$

C. $C = 15 \times \pi$

D. $C = 30 \times \pi$

43 **Shana owns a clothing store. If Shana adds a 38% markup on all items, what would be the cost of a dress Shana purchased for $24.00 after markup?**

A. $9.12

B. $14.88

C. $29.12

D. $33.12

Directions: Answer the following question(s).

44 **Lauren is estimating the number of students at her school who like to order pizza from the school's cafeteria. She needs to create a random sample of students. How should Lauren collect her sample?**

A. Lauren should visit a pizza restaurant and ask 50 people what their favorite topping is.

B. Lauren should ask the first 50 students who order pizza from the cafeteria.

C. Lauren should ask any 50 students from her school.

D. Lauren should ask 50 students who bring their lunch from home on a day when the cafeteria serves pizza.

45 **Solve.**

$$|-7 \cdot 5| =$$

A. 2

B. –2

C. 35

D. –35

46 **Ronald has 2 quarters, 4 dimes, 3 nickels, and 6 pennies in his pocket. Without looking, he pulls a coin out of his pocket. What is the probability that he pulls out a nickel?**

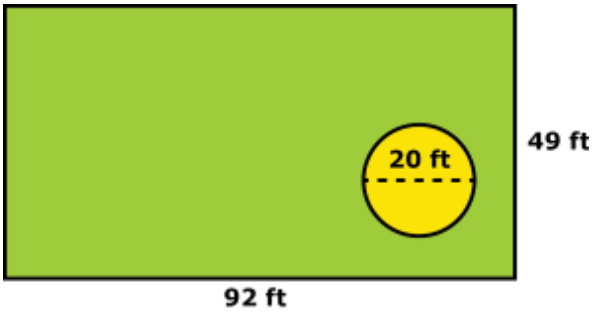
A. $\frac{1}{5}$

B. $\frac{1}{4}$

C. $\frac{1}{3}$

D. $\frac{2}{5}$

47

48 

Reggie's family is planning to put an above ground swimming pool in their back yard. Their yard is a 49 ft by 92 ft rectangle and the pool will be a circle with a diameter of 20 ft, as shown above. They will fill the rest of their yard with grass. Approximately how many square feet of their yard will be grass? ($A = \pi r^2$ and $\pi \cong 3.14$)

A. 4800 ft^2

B. 4200 ft^2

C. 3300 ft^2

D. 2100 ft^2

49 **The table shows the number of flowers used to create bouquets, based on the number of bouquets.**

Bouquets	Flowers
4	32
5	40
6	48

Find the rate of change in the table.

A. 6

B. 7

C. 8

D. 9

Directions: Answer the following question(s).

50 **A lawnmower that regularly sells for $150 is on sale for $120. By what percentage was the price decreased?**

A. 20%
B. 25%
C. 30%
D. 80%

51 **Bob bought a broken motor scooter, repaired it, and sold the scooter for $130. That was $50 less than 1.5 times what he paid for it.**

Which equation can be used to find, *p*, the amount of money Bob initially paid for the broken scooter?

A. $130(1.5) - 50 = p$
B. $130 - 50 = 1.5p$
C. $130 = 50 - 1.5p$
D. $130 = 1.5p - 50$

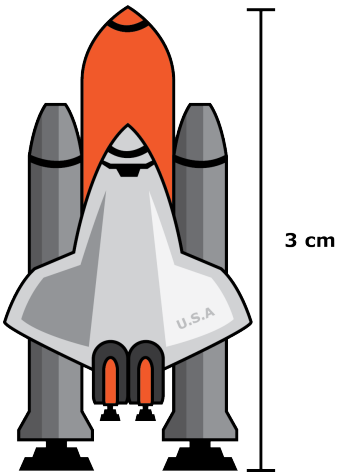
52 **A restaurant has a build your own personal pizza on their express lunch menu. A customer can only choose one item from each category. The table below shows the different choices.**

Crust	Cheese	Toppings
Thin	Mozzarella	Pepperoni
Thick	Provolone	Mushroom
Deep Dish	Italian Blend	Sausage

How many different ways can a person order a lunch pizza?

A. 3
B. 9
C. 18
D. 27

53 **The scale drawing of the space shuttle shown below is drawn using a scale of 1 centimeter (cm) = 25.5 feet (ft).**



What is the height, in feet, of the space shuttle?

A. 8.5 ft
B. 25.5 ft
C. 76.5 ft
D. 102 ft