IT'S YOUR TURN

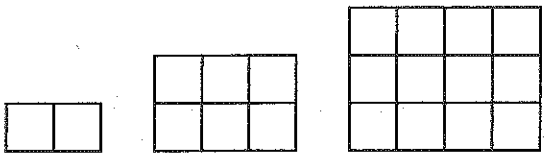
1. **Look at the pattern below.**

   8, 17, 26, 35, ...

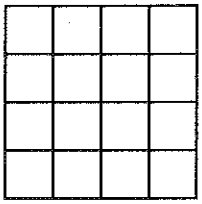
   If the pattern continues, what will be the sixth term?

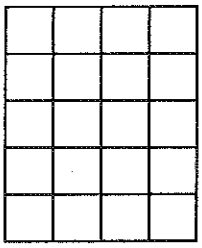
   A 44
   B 53
   C 62
   D 89

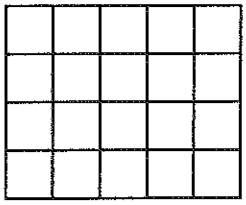
2. **Study the pattern below.**

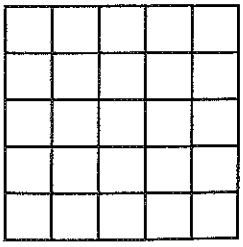


   Which of these is the next shape in the pattern?

   F 

   G 

   H 

   J 

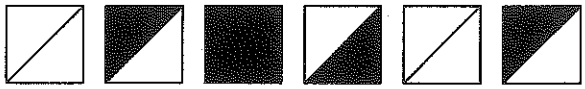
3. **Look at the first four expressions in the pattern below.**

   $9 - 3x$, $5 - 3x$, $1 - 3x$, $-3 - 3x$, ...

   If the pattern continues, what will the eighth term be?

   A $-7 - 3x$
   B $-15 - 3x$
   C $-19 - 3x$
   D $-35 - 3x$

4. **Study the pattern below.**



   Which of these is the tenth shape in the pattern?

   F 

   G 

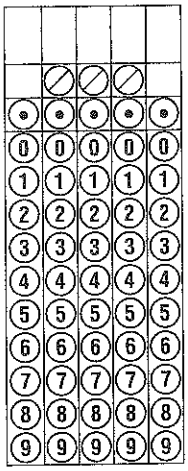
   H 

   J 

5. **Look at the pattern below.**

6, 9, 14, 21, ...

If the pattern continues, what is the tenth term?



6. **Look at the pattern below.**

0, 1, 8, 27, ...

If the pattern continues, what is the next term?

F 36

G 48

H 64

J 72

IT'S YOUR TURN

1. A biologist studies plant cells under a microscope. At the beginning of an experiment, there are 12 plant cells. Each hour, the number of plant cells doubles and increases by 4. Which of these tables shows this pattern?

A BIOLOGY STUDY

Hours	Cells
0	12
1	16
2	20
3	24

B BIOLOGY STUDY

Hours	Cells
0	12
1	24
2	48
3	96

C BIOLOGY STUDY

Hours	Cells
0	12
1	28
2	60
3	124

D BIOLOGY STUDY

Hours	Cells
0	12
1	32
2	72
3	152

2. The table below shows the number of defective batteries identified in different shipments.

BATTERY INSPECTION

Batteries in Shipment (n)	Defective Batteries (d)
100	2
200	4
300	6
400	8
500	10

Which of these equations shows the relationship between the total number of batteries in the shipment and the number of defective batteries?

F $d = 100n$

G $d = 50n$

H $d = 0.01n$

J $d = 0.02n$

3. The table below shows Morgan's weekly pay based on the number of hours she works.

MORGAN'S WEEKLY PAY

Hours Worked	Weekly Pay
5	$45
10	$90
15	$135
20	$180

Last week Morgan worked 30 hours. What was her weekly pay last week?

A $225

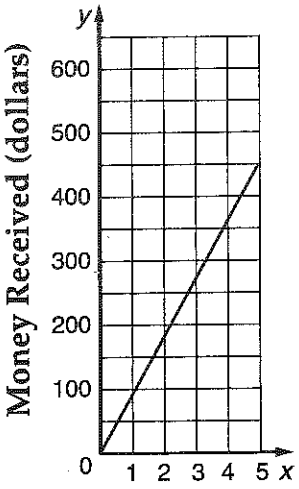
B $270

C $300

D $315

4. The Roberts family sells quilts over the Internet. The graph below shows the relationship between the number of quilts they sell and the amount of money they receive.

QUILT BUSINESS



Which of these equations shows the same information as the graph, where N is the number of quilts sold and M is the amount of money, in dollars?

F $M = 90 + N$

G $M = 90N$

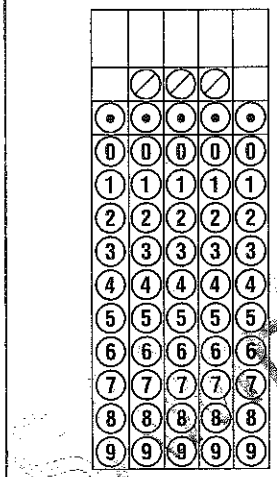
H $M = 90 - N$

J $M = 90 \div N$

5. The table below shows a relationship between a and b.

a	b
0	31
1	27
2	23
3	19

If the pattern in the table continues, what is a when $b = 7$?



IT'S YOUR TURN

1. There were $6x + 2$ girls on the soccer team. There were $x^2 - 1$ boys on the soccer team. How many boys and girls in all were on the soccer team?

   A $(6x + 2) + (x^2 - 1)$
   B $(6x + 2) - (x^2 - 1)$
   C $(6x + 2) \times (x^2 - 1)$
   D $(6x + 2) \div (x^2 - 1)$

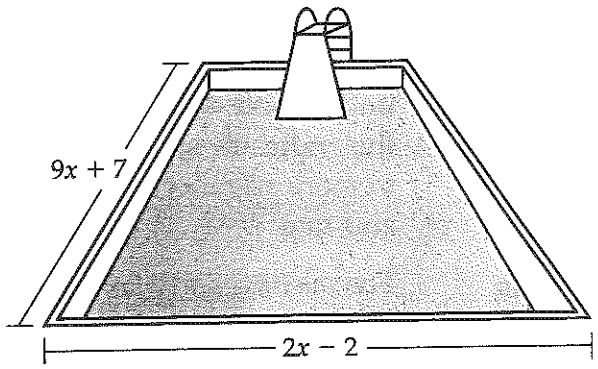
2. A store sells $y + 3$ boxes of pencils. Each box has $5y - 7$ pencils. How many pencils does the store sell?

   F $(y + 3) + (5y - 7)$
   G $(5y - 7) - (y + 3)$
   H $(y + 3) \times (5y + 7)$
   J $(5y - 7) \div (y + 3)$

3. There were $2 - x$ balloons at the party. There were $x^2 - x$ kids at the party. At the end of the party, the kids split the balloons equally. How many balloons were there for each kid?

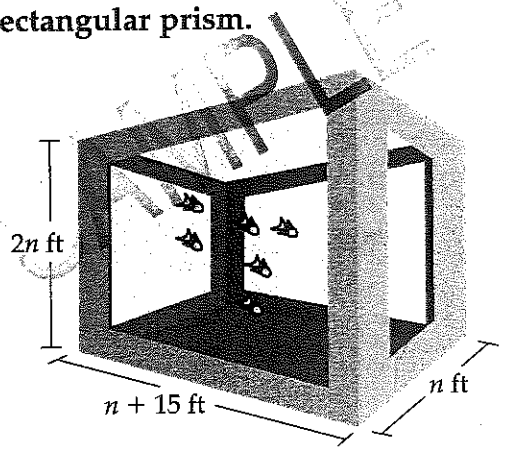
   A $(2 - x) + (x^2 - x)$
   B $(2 - x) - (x^2 - x)$
   C $(2 - x) \times (x^2 - x)$
   D $(2 - x) \div (x^2 - x)$

4. What is the perimeter of the swimming pool shown below?



   F $2(2x - 2) + 2(9x + 7)$
   G $(2x - 2) + (9x + 7)$
   H $(2x - 2) - (9x + 7)$
   J $2(2x - 2) - 2(9x + 7)$

5. A hotel lobby has a large fish tank on display. The tank is in the shape of a rectangular prism.

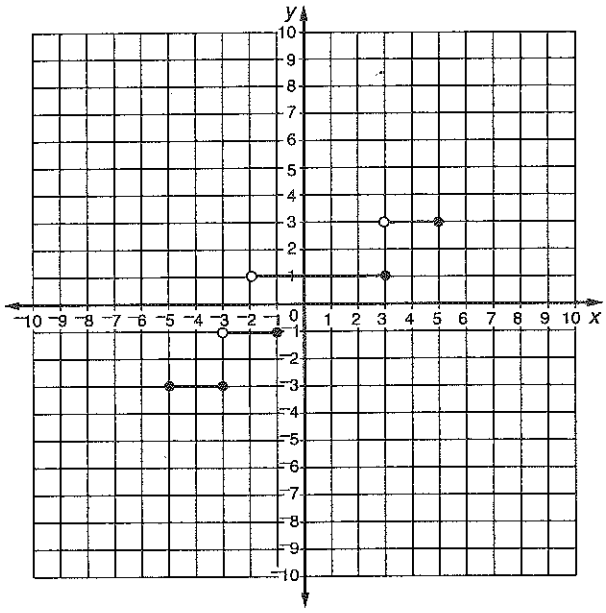


   What is the volume of the tank, in cubic feet?

   A $n + 2n + (n + 15)$
   B $n(2n)(n + 15)$
   C $n(2n) + n(n + 15)$
   D $2[n + 2n + (n + 15)]$

IT'S YOUR TURN

1. Look at the graph below.



What is the range of the graph?

A $-3 \leq y \leq 3$

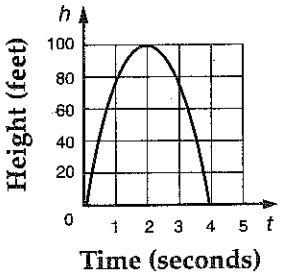
B $-5 \leq x \leq 5$

C $\{-3, -1, 1, 3\}$

D $\{-3, 3\}$

2. The graph below shows the height of a kicked football.

FOOTBALL HEIGHT



What is the maximum of the graph?

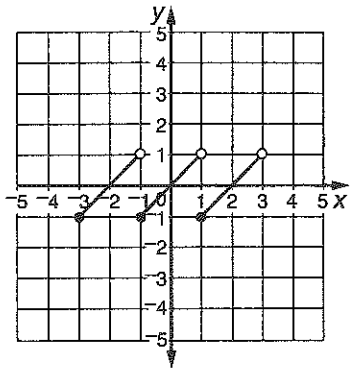
F $t = 1$

G $t = 2$

H $t = 3$

J $t = 4$

3. Look at the graph below.



Where are the zeros of this graph?

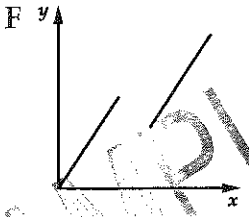
A $x = -1, 1, 3$

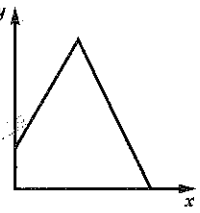
B $x = -2, 0, 2$

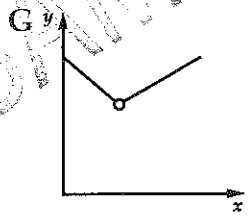
C $y = 1$

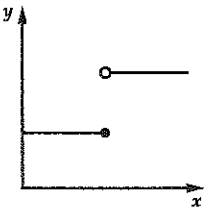
D $y = 0$

4. Which of these functions is continuous?

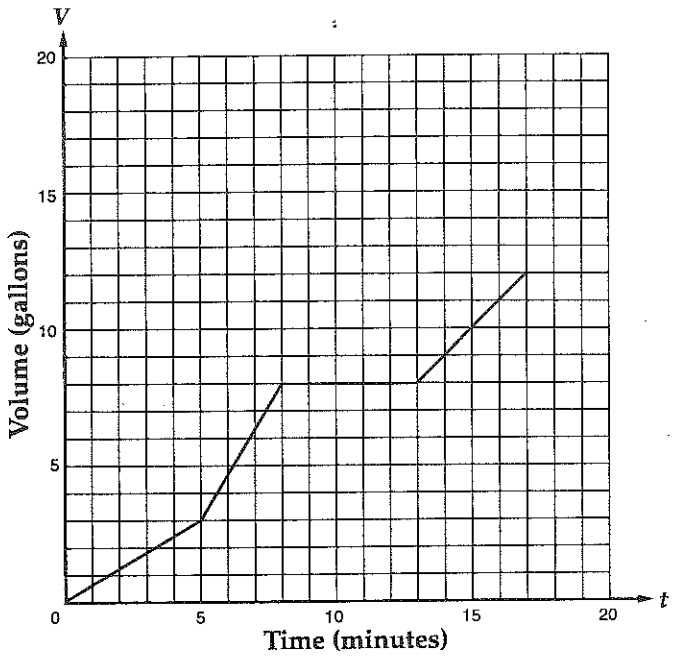
F 

H 

G 

J 

5. Water is poured into a tub. The amount of water in the tub is graphed below.



During which period was the rate of water flow the greatest?

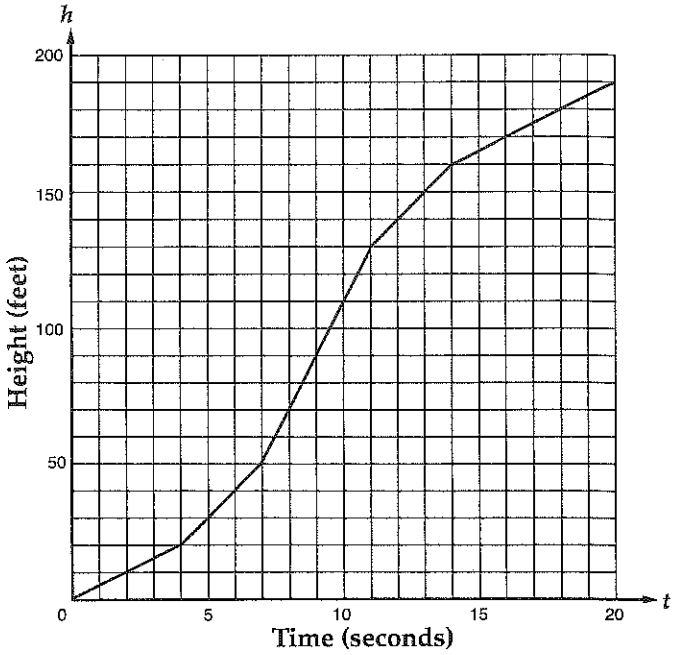
A $0 < t < 5$

B $5 < t < 8$

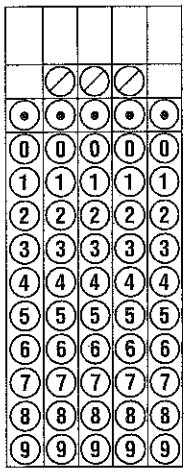
C $8 < t < 13$

D $13 < t < 17$

6. The height of a hot-air balloon is graphed below.

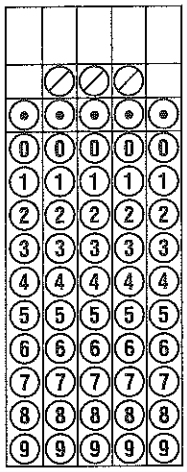


What was the balloon's greatest vertical speed, in feet per second?

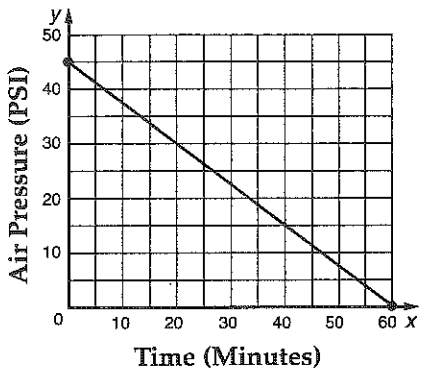


IT'S YOUR TURN

1. Trisha started out with 40,000 miles on her car, and drove exactly 800 miles a week. After how many weeks did she have 44,800 miles on her car?



2. The air pressure in a tire is 45 pounds per square inch. Air is released at a constant rate until the tire is deflated. The graph below shows the air pressure (y) in the tire after x minutes.



Which of these equations represents the relationship between time and the air pressure?

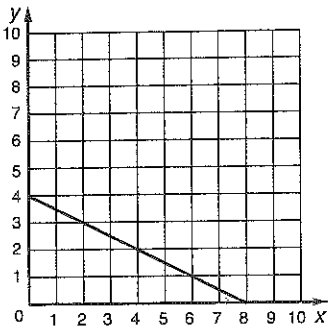
F $y = -\frac{3}{4}x + 45$

G $y = -\frac{3}{4}x - 45$

H $y = \frac{3}{4}x + 45$

J $y = \frac{3}{4}x - 45$

3. What is the slope of the line graphed below?



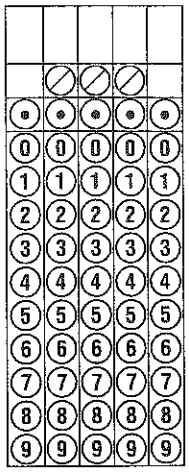
A -2

B $-\frac{1}{2}$

C $\frac{1}{2}$

D 2

4. The cost of a rug is given by the equation $C = 1.2A + 60$, where C is the cost in dollars and A is the area of the rug in square feet. What is the area, in square feet, of a rug that costs $180?



IT'S YOUR TURN

1. **Kathy is stacking encyclopedia volumes on a library bookshelf. Each volume is 2.5 inches wide. The shelf is 48 inches wide. Which inequality represents the greatest number of volumes Kathy can stack on the shelf?**

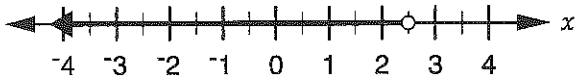
   A $2.5x \leq 48$

   B $2.5x \geq 48$

   C $48x \leq 2.5$

   D $48x \geq 2.5$

2. **Look at the graph below**



   Which of these inequalities has the solution set that is shown in the graph?

   F $2.5 \leq x$

   G $2.5 < x$

   H $2.5 \geq x$

   J $2.5 > x$

3. **A roller skating rink charges an admission fee of $5 for members and $10 for non-members. One day it made at least $300. Which of these combinations could have come that day?**

   A 25 members and 14 non-members

   B 40 members and 5 non-members

   C 10 members and 20 non-members

   D 23 members and 19 non-members

4. **A boxer must keep his weight (w) between 125 and 140 pounds to stay in the middleweight division. Which inequality expresses this?**

   F $125 \geq w \geq 140$

   G $125 \geq w \leq 140$

   H $125 \leq w \geq 140$

   J $125 \leq w \leq 140$

5. **A television quiz show awards 4 points for each right answer (r), and subtracts 2 points for each wrong answer (w). Mike wants to score at least 80 points. Which of these inequalities represents this situation?**

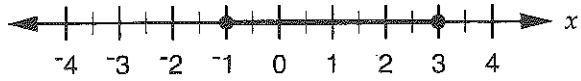
A $2r - 4w \leq 80$

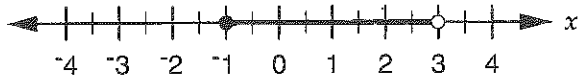
B $4r - 2w \leq 80$

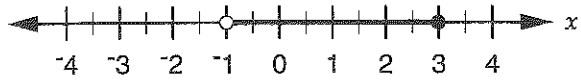
C $2r - 4w \geq 80$

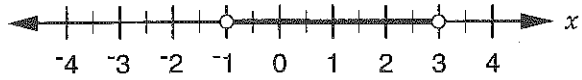
D $4r - 2w \geq 80$

6. **Which of the following graphs represents $-1 \leq x < 3$?**

F 

G 

H 

J 

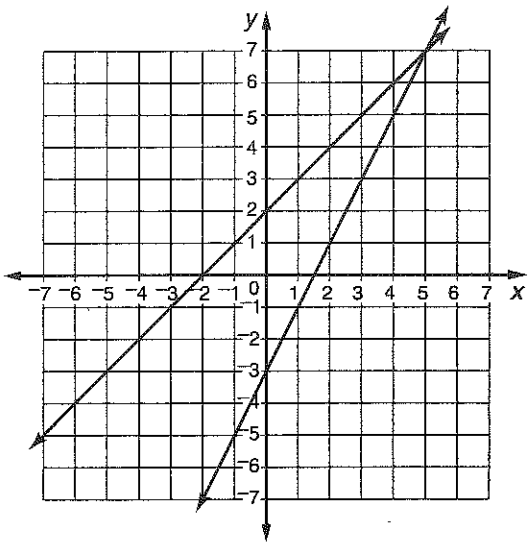
IT'S YOUR TURN

1. Look at the system of equations below.

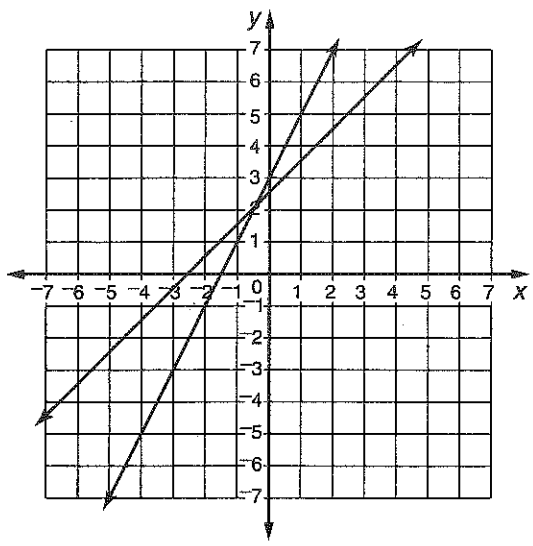
$$\begin{cases} y = x + 2 \\ y = 2x - 3 \end{cases}$$

Which of these graphs represents this system of equations?

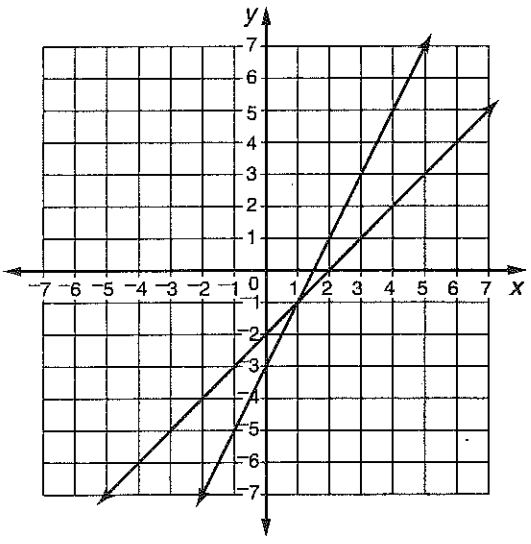
A



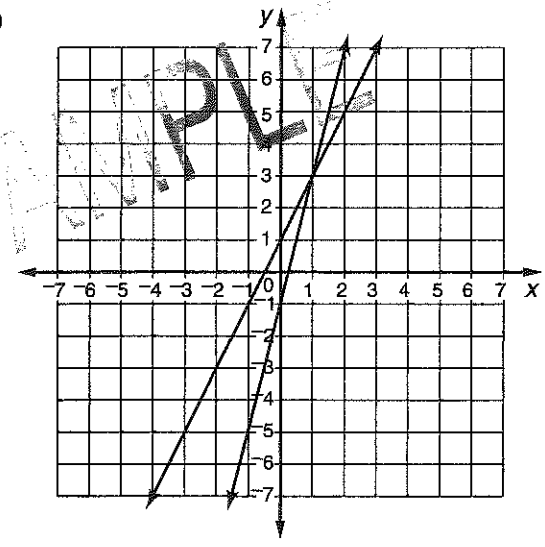
C



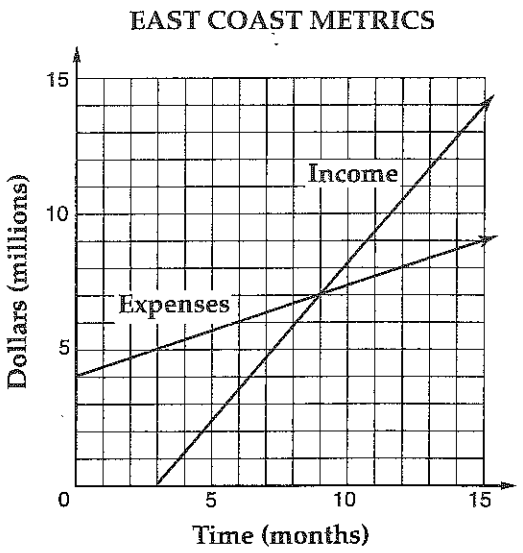
B



D



2. A new company's expenses and income are graphed below.



When did the company start to make as much money as it spent?

F 3 months

G 4 months

H 9 months

J 16 months

3. **Look at the system of equations below.**

$$\begin{cases} y = 6x - 6 \\ y = 3x - 3 \end{cases}$$

Which of the following statements is true about this system?

A It has no solution.

B It has one solution.

C It has two solutions.

D It has infinitely many solutions.

4. **Study the system of equations below.**

$$\begin{cases} x + y = -4 \\ x - y = 10 \end{cases}$$

What is the solution to the system of equations?

F (-4, 10)

G (10, 4)

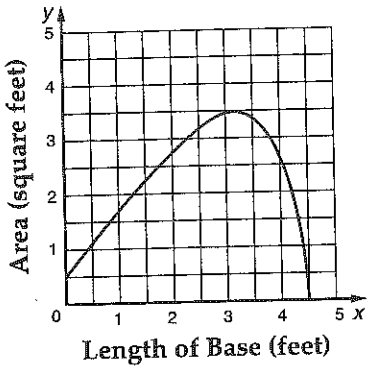
H (3, -7)

J (7, -3)

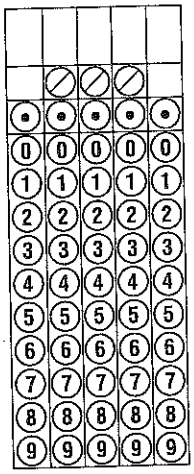
IT'S YOUR TURN

1. The perimeter of an isosceles triangle is 9 feet. The graph below shows its area as it relates to the length of its base.

ISOSCELES TRIANGLE

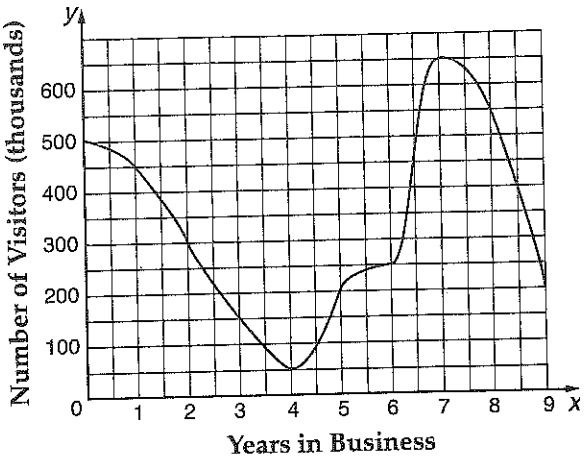


What is the maximum area, in square feet, of the isosceles triangle?



2. An Internet company tracks the number of visitors to their website. The graph below shows the number of visitors for their first 9 years in business.

WEBSITE VISITORS



When did the website have the fewest visitors?

F after 2 years

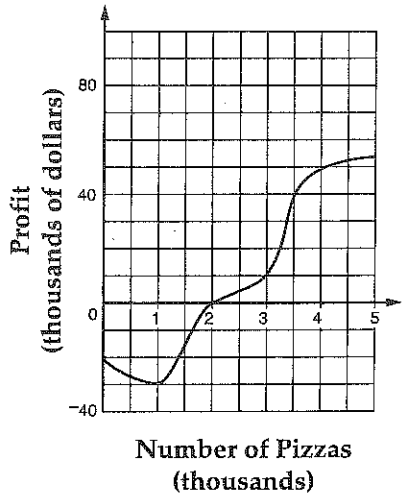
G after 4 years

H after 6 years

J after 8 years

3. The graph below shows how the profit a company makes is related to how many pizzas they make. The *break-even point* for the company is when the profit is equal to 0.

PIZZA PROFITS

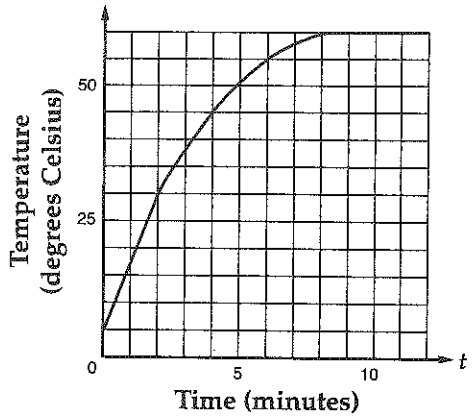


How many pizzas does the company make at the break-even point?

A 0
B 1,000
C 2,000
D 3,000

4. The temperature of a liquid is shown on the graph below.

TEMPERATURE OF A LIQUID



In which of these time intervals was the temperature of the liquid increasing the fastest?

F $0 \le t \le 2$
G $2 \le t \le 4$
H $4 \le t \le 6$
J $6 \le t \le 8$

IT'S YOUR TURN

1. In the study of electricity, the formula $V = I \times R$ is used to relate the voltage (V), current (I), and resistance (R) of circuits. What is the value of I when $V = 9$ and $R = 0.2$?

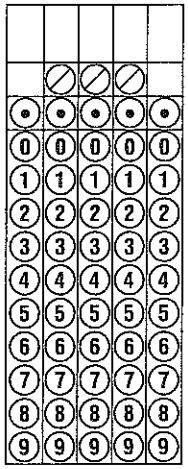
   A 1.8

   B 4.5

   C 18.0

   D 45.0

2. The volume of a sphere is given by the formula $V = \frac{4}{3}\pi r^3$, where r is the radius of the sphere. What is the volume, in cubic centimeters, of a sphere that has a radius of 10 centimeters?



3. Lauren went to a soccer match between the Tigers and the Bears. The matrices below show the souvenirs for sale at the game and the number of souvenirs that were sold.

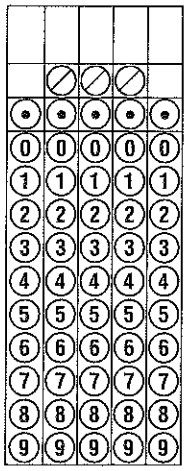
SOUVENIRS FOR SALE

	Tigers	Bears
Hats	120	105
Shirts	65	72

SOUVENIRS PURCHASED

	Tigers	Bears
Hats	98	46
Shirts	65	53

How many Bears shirts were left over after the game?



4. BCR The costs of different vehicles are given by the matrix below. The value of each vehicle is expected to decrease by 25% after 1 year.

NEW VEHICLE PRICES

	Car	Sport Utility
Basic Model	16,000	32,000
Luxury Series	21,000	48,000
Elegance Series	28,000	58,000

Complete the following:

- Create a matrix that shows the expected value of the vehicles after 1 year. Title this matrix "USED VEHICLE PRICES." Use mathematics to explain how you determined the answer. You may use words, symbols, or both in your explanation.
- Create a matrix that represents the difference between the "NEW VEHICLE PRICES" and "USED VEHICLE PRICES" matrices. What do the entries of this matrix represent in the context of the problem?

IT'S YOUR TURN

1. **A professional sports team wants to understand why so few females in the city attend the team's games. Which of these sampling methods should provide the most reliable information?**
   - A surveying 50 females, selected at random from throughout the city
   - B surveying 50 females, selected at random from throughout the U.S.
   - C surveying 500 females, selected at random from throughout the city
   - D surveying 500 females, selected at random from throughout the U.S.

2. **A car company wants to know the three features of cars that are most important to licensed drivers in the United States. The company telephones 100 Florida residents and asks a series of questions. Which of these is the population in their survey?**
   - F all licensed drivers in Florida
   - G all residents of Florida
   - H all licensed drivers in the United States
   - J all residents of the United States

3. **Andrew wants to know the average height of all 16-year-old males in Maryland. He records the heights of five 16-year-old males at his school. Which of these is the sample in his survey?**
   - A the five 16-year-olds whose heights he recorded
   - B all the 16-year-old males at his school
   - C all the 16-year-old males in Maryland
   - D all the 16-year-old males in the United States

4. **A company executive wants to know what percentage of her employees drive to work. Which of these methods would provide her with a simple random sample?**
   - F Choose the first 10 employees that arrive at the office.
   - G Choose all employees with last names that begins with "A."
   - H Assign a number to each employee and then use a random number generator to select employees.
   - J Select one department at random and then survey all employees in that department.

5. BCR There are 100 residents of a small town. The mayor would like to collect information from a sample of 10 residents. She plans the following method for obtaining her sample.

1. List the 100 residents alphabetically.
2. Use a random number generator to select a resident at random.
3. Choose that resident and the next 9 names on the list as the sample of 10 residents. If the bottom of the list is reached, continue at the top.

Complete the following:

- Will the mayor's sample be a random sample? Use mathematics to justify your answer.
- Will the mayor's sample be a simple random sample? Use mathematics to justify your answer.
- Suggest at least one reason that a simple random sample would be better than a random sample in this situation.

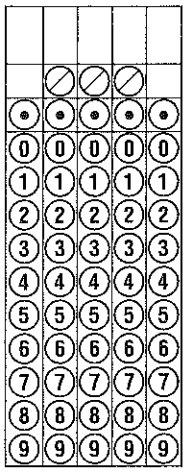
IT'S YOUR TURN

1. A marine biologist weighed sea otters. The results are shown below.

SEA OTTER WEIGHTS

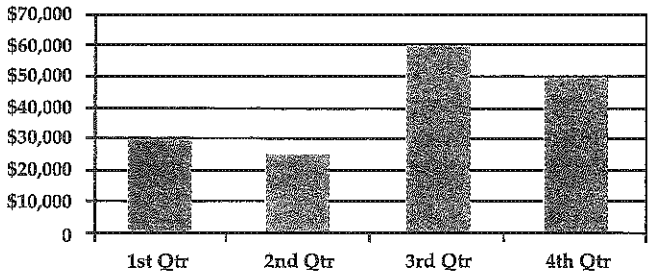
Sea Otter	Weight (lbs.)
1	70.1
2	99.0
3	85.9
4	79.4
5	73.8
6	62.7

What is the median sea otter weight, in pounds?



2. Here is a graph of how much Day's Market earned in 2002.

DAY'S MARKET



What is the mean amount Day's Market earned per quarter in 2002?

F $38,000

G $41,250

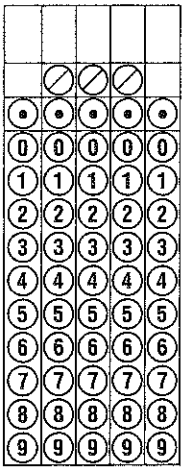
H $44,500

J $49,000

3. **Eight judges rated a slam dunk on a scale of 1 to 10. Their ratings are given below.**

6, 8, 9, 10, 6, 9, 9, 8

What was the mode of their ratings?



4. **The table below shows the area, in square miles, of 11 U.S. territories.**

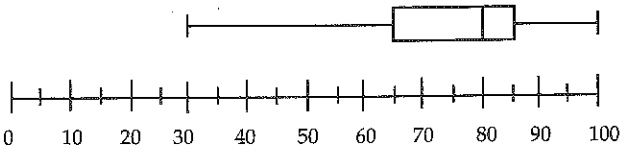
U.S. TERRITORIES

Territory	Area (sq. mi.)
Puerto Rico	3,515
Guam	212
U.S. Virgin Islands	136
American Samoa	77
Northern Mariana Islands	184
Midway Islands	2
Wake Island	3
Johnston Atoll	1
Baker, Howland, and Jarvis Islands	1
Kingman Reef	1
Navassa Island	2

What is the third quartile of the data shown?

F 136 square miles
G 145 square miles
H 184 square miles
J 212 square miles

5. **The algebra test scores from Ms. Grange's class are shown in the box-and-whiskers plot below.**



What is the interquartile range?

A 5
B 15
C 20
D 25

IT'S YOUR TURN

1. Diego tosses a thumbtack in the air and records the way it lands. His results are shown in the table below.

DIEGO'S THUMBTACK

How the Tack Landed	Number of Times
pointed up	8
pointed down	12

Based on his data, what is the probability of the thumbtack landing pointed up?

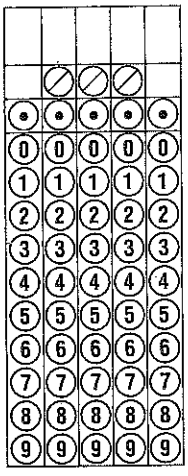
A $\frac{8}{12}$

B $\frac{8}{20}$

C $\frac{12}{20}$

D $\frac{12}{100}$

2. **A spinner has an equal chance of landing on each of the whole numbers 1 through 20. What is the probability that the spinner will land on an odd number greater than 10?**

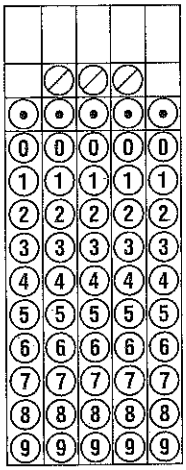


3. **The 1,276 fans at a basketball tournament were asked to name their favorite team as they entered the arena. The results are shown in the table below.**

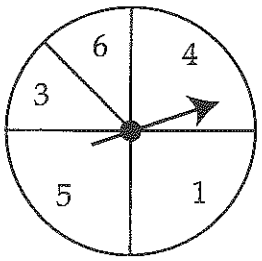
TOURNAMENT FANS

Favorite Team	Number of Fans
Bobcats	234
Lancers	153
Jaguars	173
Sun Bears	257
Wolverines	117
Knights	342

At halftime, a fan was selected at random to win a basketball. What is the probability that the fan's favorite team was the Sun Bears? Express your answer as a decimal.



4. Donna is spinning the game spinner shown below.



What is the probability that the spinner will land on an even number?

F $\frac{1}{8}$

G $\frac{1}{4}$

H $\frac{3}{8}$

J $\frac{3}{4}$

5. When a bear gives birth to cubs, there is an equal chance that each cub will be female or male. The list below shows the four possible ways a bear can have two cubs.

- both cubs male
- first cub male, second cub female
- first cub female, second cub male
- both cubs female

For a bear that has two cubs, what is the probability that at least one of the cubs is female?

A $\frac{1}{4}$

B $\frac{1}{2}$

C $\frac{2}{3}$

D $\frac{3}{4}$

IT'S YOUR TURN

1. A basketball player expects that she has an 80% chance of scoring each time that she attempts a free throw. She wants to know the probability of scoring on two consecutive free throw attempts. She uses a random number generator to conduct a simulation, where the digits 0 through 7 represent a successful free throw. Her simulation data for 10 trials are shown below.

21	64	09	85	48
17	64	96	00	74

Based on her simulation data, what is the probability of being successful on two consecutive free throw attempts?

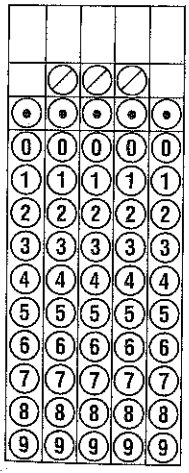
A 20%

B 40%

C 60%

D 80%

2. There are 500 participants in a spelling competition. In a random sample of 25 participants, 21 say that they read at least 3 books per week. How many of the total participants are expected to read at least 3 books per week?



3. A school has the same number of boys as girls. The principal will randomly select 6 students to be on the Arts Committee. He wants to know what the probability is that the committee will have the same number of boys as girls. He conducts a simulation using coin flips, where heads (H) represents boys and tails (T) represents girls. His data are shown below.

HTHTHT	HTTTHT	THTHTT
TTTHHT	HTTTHT	THTHTT
THHTHT	HHHTHH	THTHTH
HHHHTH	TTTHTT	HTHTHT
THTHTH	HHHTTT	THHHTT
HHHTTH	HHTHHH	TTTTTH

Based on his simulation data, what is the probability that the Arts Committee will have an equal number of boys and girls?

A $\frac{7}{18}$

B $\frac{8}{18}$

C $\frac{9}{18}$

D $\frac{10}{18}$

4. BCR Jermaine applied for 3 different jobs. He thinks there is a 50% chance he will be offered each job.

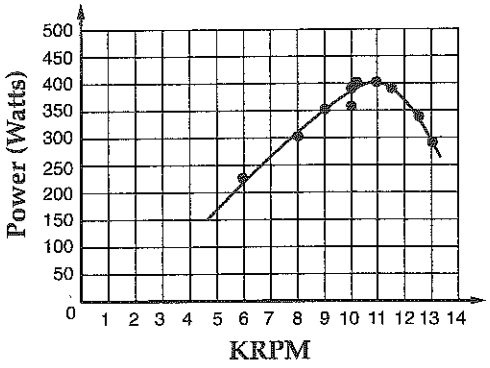
Complete the following:

- Describe how Jermaine could use a spinner to model this situation.
- Show what a sample of data from at least 5 trials might be expected to look like.
- Based on your sample data, what is the probability that Jermaine will be offered exactly two of the jobs? Use mathematics to justify your answer.

IT'S YOUR TURN

1. A toy airplane engine has been tested for power output versus thousands of revolutions per minute (KRPM). A curve of best fit has been drawn.

TOY AIRPLANE ENGINE



According to the curve of best fit, the engine has maximum power at how many KRPM?

A 11

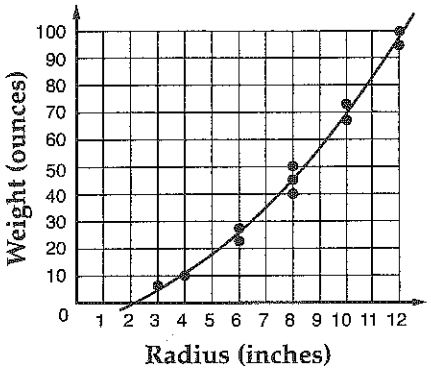
B 13

C 275

D 400

2. The weights and radii of several round cheese pizzas are plotted below. A curve of best fit has been drawn.

ROUND PIZZAS



According to the curve of best fit, how much would you expect a pizza with a 5-inch radius to weigh?

F 4 ounces

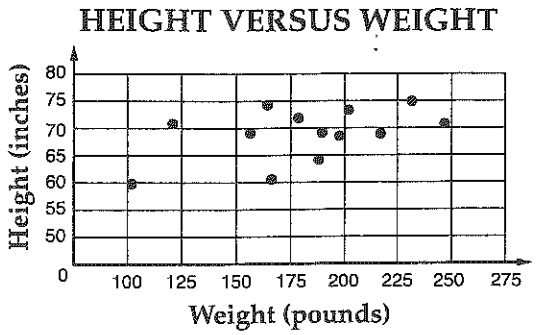
G 17 ounces

H 50 ounces

J 70 ounces

3. The heights and weights of 13 men are plotted below.

BCR



Complete the following:

- Write an equation for the line of best fit. Let x represent weight, and y represent height.
- According to your line of best fit, what is the expected height of a man who weighs 225 pounds? Use mathematics to justify your answer.

IT'S YOUR TURN

1. **Arthur wants to know what percentage of drivers in his town favor a new highway project. Which of these samples will provide the most reliable data?**

   A 50 drivers randomly selected at a political rally

   B 50 drivers randomly selected from a traffic jam

   C 50 drivers randomly selected at a construction agency

   D 50 drivers randomly selected from a list of licensed drivers

2. **The table below shows the value of a rare coin over many years.**

RARE COIN

Year	Value
1980	$120
1985	$160
1990	$280
1995	$300
2000	$340

For which of these years would it be least reliable to predict the value of the coin?

F 1978

G 1983

H 1997

J 2009

3. **The table below shows the profits of a technology firm over several years.**

TECHNOTECH PROFITS

Year	Profit
1994	$1.1 million
1996	$1.4 million
1998	$1.9 million
2000	$2.2 million
2002	$2.6 million

For which of these years would it be least accurate to estimate the profits of the firm?

A 1995

B 1999

C 2001

D 2007

4. ECR The table below shows three different companies and the percentages of their batteries that are defective.

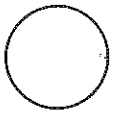
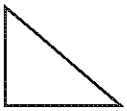
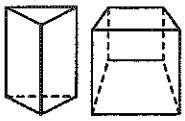
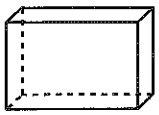
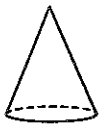
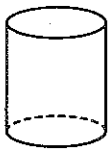
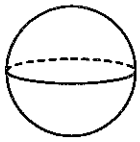
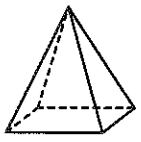
DEFECTIVE BATTERIES

Company	Percent of Batteries that Are Defective
Marksman	1.2%
Twilight	0.8%
Jopson	1.1%

Complete the following:

- Suppose you were the vice president of marketing for Twilight. Describe how you could graph the data to make it appear that Twilight batteries are much better than the other two brands.
- Now suppose that you worked for one of the other companies. Describe how you could graph the data to make it appear that all three companies are about the same.
- Which graph more accurately represents the data? Justify your answer.

Appendix: Mathematical Formulas

Shape	Area (A) and Circumference (C) Formulas
Circle 	$A = \pi r^2 = \pi \times$ square of radius $C = 2\pi r = 2 \times \pi \times$ radius $C = \pi d = \pi \times$ diameter
Parallelogram 	$A = bh =$ base $\times$ height
Rectangle 	$A = lw =$ length $\times$ width
Trapezoid 	$A = \frac{1}{2}(b_1 + b_2)h = \frac{1}{2} \times$ sum of bases $\times$ height
Triangle 	$A = \frac{1}{2}bh = \frac{1}{2} \times$ base $\times$ height
Figure	**Surface Area (SA) and Volume (V) Formulas**
General Prism 	$V = Bh =$ area of base $\times$ height $SA =$ sum of the areas of the faces
Rectangular Prism 	$V = lwh =$ length $\times$ width $\times$ height $SA = 2lw + 2hw + 2lh$ $= 2$(length $\times$ width) + 2(height $\times$ width) + 2(length $\times$ height)
Right Circular Cone 	$V = \frac{1}{3}Bh = \frac{1}{3} \times$ area of base $\times$ height $SA = B + \frac{1}{2}C\ell =$ area of base + ($\frac{1}{2} \times$ circumference $\times$ slant height)
Right Circular Cylinder 	$V = Bh =$ area of base $\times$ height $SA = 2B + Ch =$ (2 $\times$ area of base) + (circumference $\times$ height)
Sphere 	$V = \frac{4}{3}\pi r^3 = \frac{4}{3} \times \pi \times$ cube of radius $SA = 4\pi r^2 = 4 \times \pi \times$ square of radius
Square Pyramid 	$V = \frac{1}{3}Bh = \frac{1}{3} \times$ area of base $\times$ height $SA = B + \frac{1}{2}P\ell$ $=$ area of base + ($\frac{1}{2} \times$ perimeter of base $\times$ slant height)

Equations of a Line

Standard Form:

$Ax + By = C$

where A and B are not both zero

Slope-Intercept Form:

$y = mx + b$ or $y = b + mx$

where m = slope and b = y-intercept

Point-Slope Form:

$y - y_1 = m(x - x_1)$

where m = slope, (x_1, y_1) = point on line

Coordinate Geometry

Let (x_1, y_1) and (x_2, y_2) be two points in the plane.

slope $= \frac{y_2 - y_1}{x_2 - x_1}$ where $x_2 \neq x_1$

midpoint $= \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

distance $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Distance Formula

$d = rt$

distance = rate × time

Simple Interest

$I = prt$

interest = principal × interest rate × time

Polygon Angles

Sum of degree measures of the interior angles of a polygon:

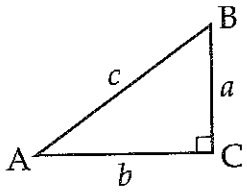
$180(n - 2)$

Degree measure of an interior angle of a regular polygon:

$\frac{180(n - 2)}{n}$

where n is the number of sides of the polygon

Formulas for Right Triangles



Pythagorean Theorem:

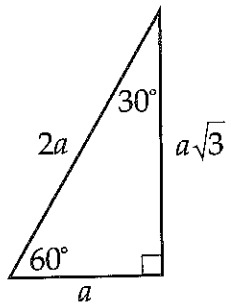
$a^2 + b^2 = c^2$

$\sin A = \frac{a}{c} = \frac{\text{opposite}}{\text{hypotenuse}}$

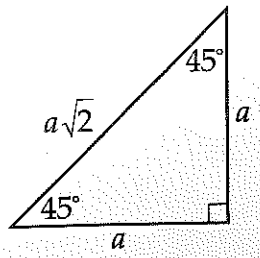
$\cos A = \frac{b}{c} = \frac{\text{adjacent}}{\text{hypotenuse}}$

$\tan A = \frac{a}{b} = \frac{\text{opposite}}{\text{adjacent}}$

Special Right Triangles



30-60-90 Triangle



45-45-90 Triangle