

Math Tests

The SAT[®]

Practice Test #1

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Math Test – No Calculator

25 MINUTES, 20 QUESTIONS

Turn to Section 3 of your answer sheet to answer the questions in this section.

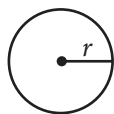
DIRECTIONS

For questions 1-15, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. For questions 16-20, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 16 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

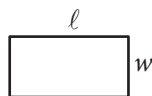
1. The use of a calculator **is not permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
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5. Unless otherwise indicated, the domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

REFERENCE

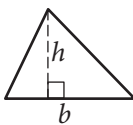


$$A = \pi r^2$$

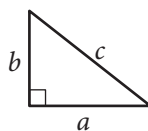
$$C = 2\pi r$$



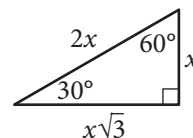
$$A = \ell w$$



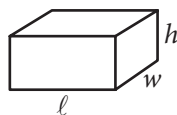
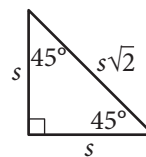
$$A = \frac{1}{2}bh$$



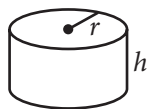
$$c^2 = a^2 + b^2$$



Special Right Triangles



$$V = \ell wh$$



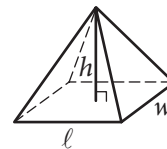
$$V = \pi r^2 h$$



$$V = \frac{4}{3}\pi r^3$$



$$V = \frac{1}{3}\pi r^2 h$$



$$V = \frac{1}{3}\ell wh$$

The number of degrees of arc in a circle is 360.

The number of radians of arc in a circle is 2π .

The sum of the measures in degrees of the angles of a triangle is 180.



1

If $\frac{x-1}{3} = k$ and $k = 3$, what is the value of x ?

- A) 2
- B) 4
- C) 9
- D) 10

2

For $i = \sqrt{-1}$, what is the sum $(7 + 3i) + (-8 + 9i)$?

- A) $-1 + 12i$
- B) $-1 - 6i$
- C) $15 + 12i$
- D) $15 - 6i$

3

On Saturday afternoon, Armand sent m text messages each hour for 5 hours, and Tyrone sent p text messages each hour for 4 hours. Which of the following represents the total number of messages sent by Armand and Tyrone on Saturday afternoon?

- A) $9mp$
- B) $20mp$
- C) $5m + 4p$
- D) $4m + 5p$

4

Kathy is a repair technician for a phone company. Each week, she receives a batch of phones that need repairs. The number of phones that she has left to fix at the end of each day can be estimated with the equation $P = 108 - 23d$, where P is the number of phones left and d is the number of days she has worked that week. What is the meaning of the value 108 in this equation?

- A) Kathy will complete the repairs within 108 days.
- B) Kathy starts each week with 108 phones to fix.
- C) Kathy repairs phones at a rate of 108 per hour.
- D) Kathy repairs phones at a rate of 108 per day.



5

$$(x^2y - 3y^2 + 5xy^2) - (-x^2y + 3xy^2 - 3y^2)$$

Which of the following is equivalent to the expression above?

- A) $4x^2y^2$
- B) $8xy^2 - 6y^2$
- C) $2x^2y + 2xy^2$
- D) $2x^2y + 8xy^2 - 6y^2$

6

$$h = 3a + 28.6$$

A pediatrician uses the model above to estimate the height h of a boy, in inches, in terms of the boy's age a , in years, between the ages of 2 and 5. Based on the model, what is the estimated increase, in inches, of a boy's height each year?

- A) 3
- B) 5.7
- C) 9.5
- D) 14.3

7

$$m = \frac{\left(\frac{r}{1,200}\right)\left(1 + \frac{r}{1,200}\right)^N}{\left(1 + \frac{r}{1,200}\right)^N - 1} P$$

The formula above gives the monthly payment m needed to pay off a loan of P dollars at r percent annual interest over N months. Which of the following gives P in terms of m , r , and N ?

$$\text{A) } P = \frac{\left(\frac{r}{1,200}\right)\left(1 + \frac{r}{1,200}\right)^N}{\left(1 + \frac{r}{1,200}\right)^N - 1} m$$

$$\text{B) } P = \frac{\left(1 + \frac{r}{1,200}\right)^N - 1}{\left(\frac{r}{1,200}\right)\left(1 + \frac{r}{1,200}\right)^N} m$$

$$\text{C) } P = \left(\frac{r}{1,200}\right) m$$

$$\text{D) } P = \left(\frac{1,200}{r}\right) m$$



8

If $\frac{a}{b} = 2$, what is the value of $\frac{4b}{a}$?

- A) 0
- B) 1
- C) 2
- D) 4

9

$$\begin{aligned} 3x + 4y &= -23 \\ 2y - x &= -19 \end{aligned}$$

What is the solution (x, y) to the system of equations above?

- A) $(-5, -2)$
- B) $(3, -8)$
- C) $(4, -6)$
- D) $(9, -6)$

10

$$g(x) = ax^2 + 24$$

For the function g defined above, a is a constant and $g(4) = 8$. What is the value of $g(-4)$?

- A) 8
- B) 0
- C) -1
- D) -8

11

$$b = 2.35 + 0.25x$$

$$c = 1.75 + 0.40x$$

In the equations above, b and c represent the price per pound, in dollars, of beef and chicken, respectively, x weeks after July 1 during last summer. What was the price per pound of beef when it was equal to the price per pound of chicken?

- A) \$2.60
- B) \$2.85
- C) \$2.95
- D) \$3.35

12

A line in the xy -plane passes through the origin and has a slope of $\frac{1}{7}$. Which of the following points lies on the line?

- A) $(0, 7)$
- B) $(1, 7)$
- C) $(7, 7)$
- D) $(14, 2)$



13

If $x > 3$, which of the following is equivalent

to $\frac{1}{\frac{1}{x+2} + \frac{1}{x+3}}$?

A) $\frac{2x+5}{x^2+5x+6}$

B) $\frac{x^2+5x+6}{2x+5}$

C) $2x+5$

D) x^2+5x+6

14

If $3x - y = 12$, what is the value of $\frac{8^x}{2^y}$?

A) 2^{12}

B) 4^4

C) 8^2

D) The value cannot be determined from the information given.

15

If $(ax+2)(bx+7) = 15x^2 + cx + 14$ for all values of x , and $a+b=8$, what are the two possible values for c ?

A) 3 and 5

B) 6 and 35

C) 10 and 21

D) 31 and 41

**DIRECTIONS**

For questions 16–20, solve the problem and enter your answer in the grid, as described below, on the answer sheet.

- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately. You will receive credit only if the circles are filled in correctly.
- Mark no more than one circle in any column.
- No question has a negative answer.
- Some problems may have more than one correct answer. In such cases, grid only one answer.

- Mixed numbers** such as $3\frac{1}{2}$ must be gridded

as 3.5 or $7/2$. (If  is entered into the grid, it will be interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)

- Decimal answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid.

Answer: $\frac{7}{12}$

Write answer in boxes. →

7	/	1	2
•	•	•	•
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

← Fraction line

Grid in result.

Answer: 2.5

2	.	5
•	•	•
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

← Decimal point

Acceptable ways to grid $\frac{2}{3}$ are:

2	/	3
•	•	•
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

.	6	6	6
•	•	•	•
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

.	6	6	7
•	•	•	•
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Answer: 201 – either position is correct

2	0	1
•	•	•
0	0	0
1	1	1
2	2	2
3	3	3

2	0	1
•	•	•
0	0	0
1	1	1
2	2	2
3	3	3

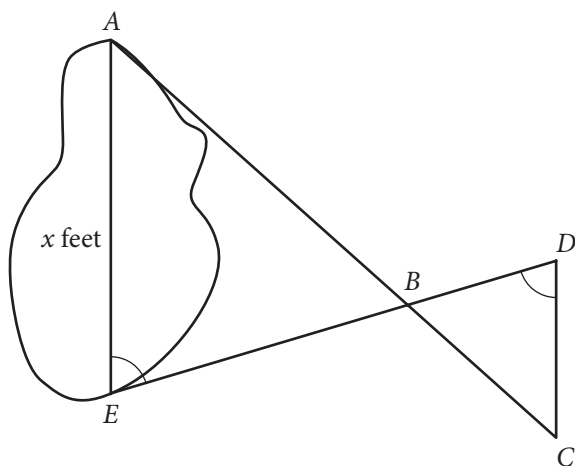
NOTE: You may start your answers in any column, space permitting. Columns you don't need to use should be left blank.



16

If $t > 0$ and $t^2 - 4 = 0$, what is the value of t ?

17



A summer camp counselor wants to find a length, x , in feet, across a lake as represented in the sketch above. The lengths represented by AB , EB , BD , and CD on the sketch were determined to be 1800 feet, 1400 feet, 700 feet, and 800 feet, respectively. Segments AC and DE intersect at B , and $\angle AEB$ and $\angle CDB$ have the same measure. What is the value of x ?

18

$$\begin{aligned}x + y &= -9 \\x + 2y &= -25\end{aligned}$$

According to the system of equations above, what is the value of x ?

19

In a right triangle, one angle measures x° , where

$$\sin x^\circ = \frac{4}{5}.$$

What is $\cos(90^\circ - x^\circ)$?

20

If $a = 5\sqrt{2}$ and $2a = \sqrt{2x}$, what is the value of x ?

STOP

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section.**



Math Test – Calculator

55 MINUTES, 38 QUESTIONS

Turn to Section 4 of your answer sheet to answer the questions in this section.

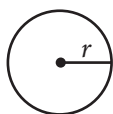
DIRECTIONS

For questions 1-30, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. For questions 31-38, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 31 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

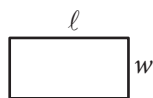
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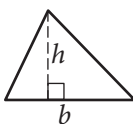


$$A = \pi r^2$$

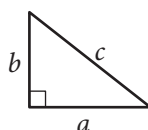
$$C = 2\pi r$$



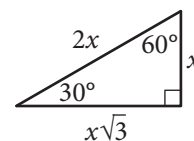
$$A = \ell w$$



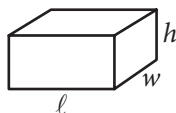
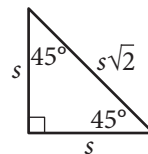
$$A = \frac{1}{2}bh$$



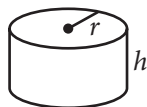
$$c^2 = a^2 + b^2$$



Special Right Triangles



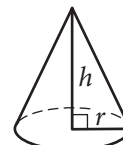
$$V = \ell wh$$



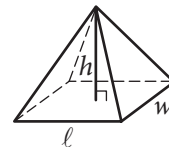
$$V = \pi r^2 h$$



$$V = \frac{4}{3}\pi r^3$$



$$V = \frac{1}{3}\pi r^2 h$$



$$V = \frac{1}{3}\ell wh$$

The number of degrees of arc in a circle is 360.

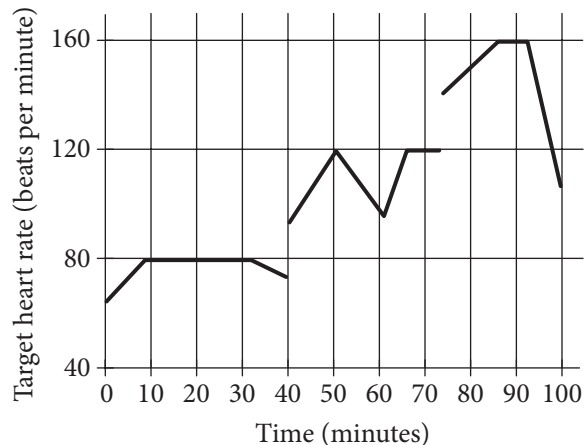
The number of radians of arc in a circle is 2π .

The sum of the measures in degrees of the angles of a triangle is 180.



1

John runs at different speeds as part of his training program. The graph shows his target heart rate at different times during his workout. On which interval is the target heart rate strictly increasing then strictly decreasing?



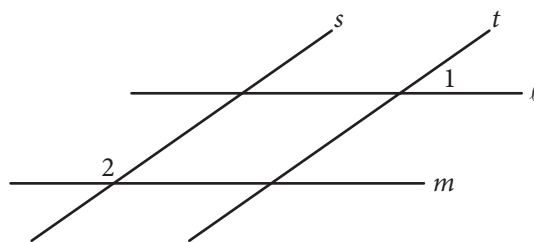
- A) Between 0 and 30 minutes
- B) Between 40 and 60 minutes
- C) Between 50 and 65 minutes
- D) Between 70 and 90 minutes

2

If $y = kx$, where k is a constant, and $y = 24$ when $x = 6$, what is the value of y when $x = 5$?

- A) 6
- B) 15
- C) 20
- D) 23

3



In the figure above, lines ℓ and m are parallel and lines s and t are parallel. If the measure of $\angle 1$ is 35° , what is the measure of $\angle 2$?

- A) 35°
- B) 55°
- C) 70°
- D) 145°

4

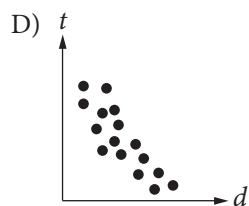
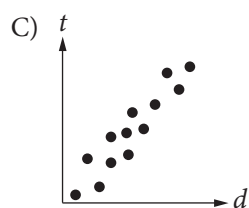
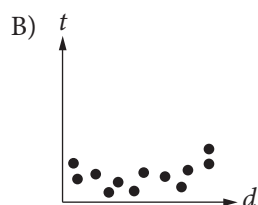
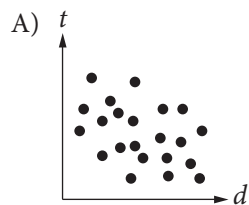
If $16 + 4x$ is 10 more than 14, what is the value of $8x$?

- A) 2
- B) 6
- C) 16
- D) 80



5

Which of the following graphs best shows a strong negative association between d and t ?



6

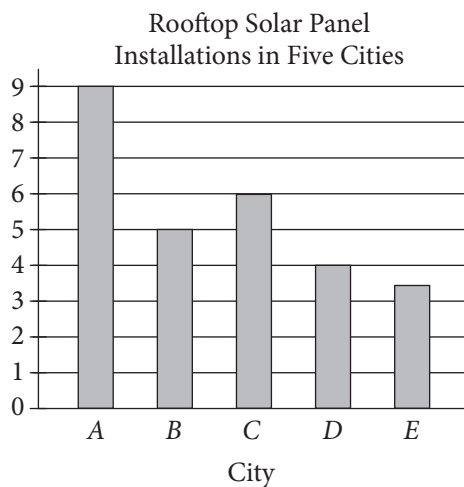
1 decagram = 10 grams
1,000 milligrams = 1 gram

A hospital stores one type of medicine in 2-decagram containers. Based on the information given in the box above, how many 1-milligram doses are there in one 2-decagram container?

- A) 0.002
- B) 200
- C) 2,000
- D) 20,000



7



The number of rooftops with solar panel installations in 5 cities is shown in the graph above. If the total number of installations is 27,500, what is an appropriate label for the vertical axis of the graph?

- A) Number of installations (in tens)
- B) Number of installations (in hundreds)
- C) Number of installations (in thousands)
- D) Number of installations (in tens of thousands)

8

For what value of n is $|n - 1| + 1$ equal to 0?

- A) 0
- B) 1
- C) 2
- D) There is no such value of n .



Questions 9 and 10 refer to the following information.

$$a = 1,052 + 1.08t$$

The speed of a sound wave in air depends on the air temperature. The formula above shows the relationship between a , the speed of a sound wave, in feet per second, and t , the air temperature, in degrees Fahrenheit ($^{\circ}\text{F}$).

9

Which of the following expresses the air temperature in terms of the speed of a sound wave?

- A) $t = \frac{a - 1,052}{1.08}$
- B) $t = \frac{a + 1,052}{1.08}$
- C) $t = \frac{1,052 - a}{1.08}$
- D) $t = \frac{1.08}{a + 1,052}$

10

At which of the following air temperatures will the speed of a sound wave be closest to 1,000 feet per second?

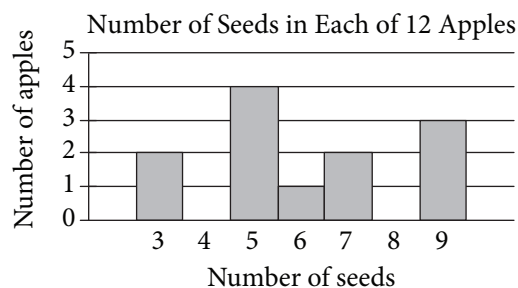
- A) -46°F
- B) -48°F
- C) -49°F
- D) -50°F

11

Which of the following numbers is NOT a solution of the inequality $3x - 5 \geq 4x - 3$?

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

12



Based on the histogram above, of the following, which is closest to the average (arithmetic mean) number of seeds per apple?

- A) 4
- B) 5
- C) 6
- D) 7



13

		Course			Total
		Algebra I	Geometry	Algebra II	
Gender	Female	35	53	62	150
	Male	44	59	57	160
	Total	79	112	119	310

A group of tenth-grade students responded to a survey that asked which math course they were currently enrolled in. The survey data were broken down as shown in the table above. Which of the following categories accounts for approximately 19 percent of all the survey respondents?

- A) Females taking Geometry
- B) Females taking Algebra II
- C) Males taking Geometry
- D) Males taking Algebra I

14

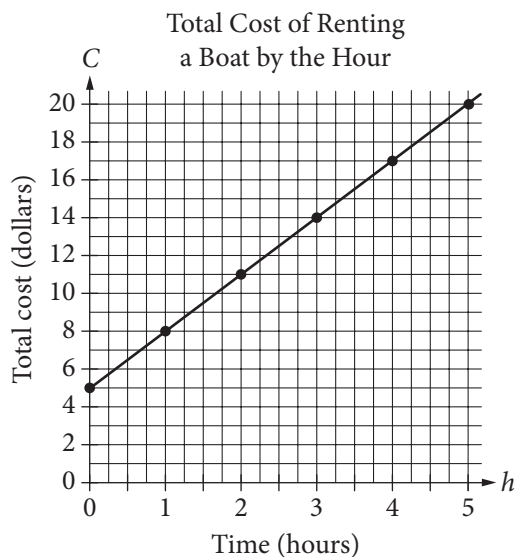
Lengths of Fish (in inches)						
8	9	9	9	10	10	11
11	12	12	12	12	13	13
13	14	14	15	15	16	24

The table above lists the lengths, to the nearest inch, of a random sample of 21 brown bullhead fish. The outlier measurement of 24 inches is an error. Of the mean, median, and range of the values listed, which will change the most if the 24-inch measurement is removed from the data?

- A) Mean
- B) Median
- C) Range
- D) They will all change by the same amount.



Questions 15 and 16 refer to the following information.



The graph above displays the total cost C , in dollars, of renting a boat for h hours.

15

What does the C -intercept represent in the graph?

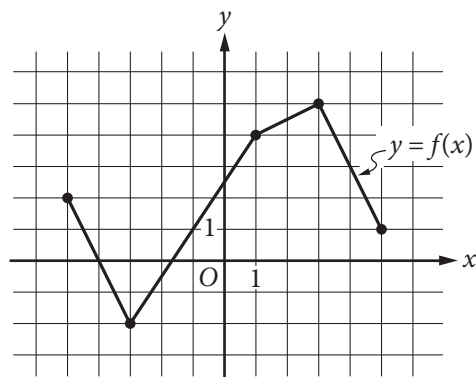
- A) The initial cost of renting the boat
- B) The total number of boats rented
- C) The total number of hours the boat is rented
- D) The increase in cost to rent the boat for each additional hour

16

Which of the following represents the relationship between h and C ?

- A) $C = 5h$
- B) $C = \frac{3}{4}h + 5$
- C) $C = 3h + 5$
- D) $h = 3C$

17



The complete graph of the function f is shown in the xy -plane above. For what value of x is the value of $f(x)$ at its minimum?

- A) -5
- B) -3
- C) -2
- D) 3



18

$$y < -x + a$$

$$y > x + b$$

In the xy -plane, if $(0, 0)$ is a solution to the system of inequalities above, which of the following relationships between a and b must be true?

- A) $a > b$
- B) $b > a$
- C) $|a| > |b|$
- D) $a = -b$

19

A food truck sells salads for \$6.50 each and drinks for \$2.00 each. The food truck's revenue from selling a total of 209 salads and drinks in one day was \$836.50. How many salads were sold that day?

- A) 77
- B) 93
- C) 99
- D) 105



20

Alma bought a laptop computer at a store that gave a 20 percent discount off its original price. The total amount she paid to the cashier was p dollars, including an 8 percent sales tax on the discounted price. Which of the following represents the original price of the computer in terms of p ?

- A) $0.88p$
- B) $\frac{p}{0.88}$
- C) $(0.8)(1.08)p$
- D) $\frac{p}{(0.8)(1.08)}$

21

Dreams Recalled during One Week

	None	1 to 4	5 or more	Total
Group X	15	28	57	100
Group Y	21	11	68	100
Total	36	39	125	200

The data in the table above were produced by a sleep researcher studying the number of dreams people recall when asked to record their dreams for one week. Group X consisted of 100 people who observed early bedtimes, and Group Y consisted of 100 people who observed later bedtimes. If a person is chosen at random from those who recalled at least 1 dream, what is the probability that the person belonged to Group Y ?

- A) $\frac{68}{100}$
- B) $\frac{79}{100}$
- C) $\frac{79}{164}$
- D) $\frac{164}{200}$



Questions 22 and 23 refer to the following information.

Annual Budgets for Different Programs in Kansas, 2007 to 2010

Program	Year			
	2007	2008	2009	2010
Agriculture/natural resources	373,904	358,708	485,807	488,106
Education	2,164,607	2,413,984	2,274,514	3,008,036
General government	14,347,325	12,554,845	10,392,107	14,716,155
Highways and transportation	1,468,482	1,665,636	1,539,480	1,773,893
Human resources	4,051,050	4,099,067	4,618,444	5,921,379
Public safety	263,463	398,326	355,935	464,233

The table above lists the annual budget, in thousands of dollars, for each of six different state programs in Kansas from 2007 to 2010.

22

Which of the following best approximates the average rate of change in the annual budget for agriculture/natural resources in Kansas from 2008 to 2010?

- A) \$50,000,000 per year
- B) \$65,000,000 per year
- C) \$75,000,000 per year
- D) \$130,000,000 per year

23

Of the following, which program's ratio of its 2007 budget to its 2010 budget is closest to the human resources program's ratio of its 2007 budget to its 2010 budget?

- A) Agriculture/natural resources
- B) Education
- C) Highways and transportation
- D) Public safety



24

Which of the following is an equation of a circle in the xy -plane with center $(0, 4)$ and a radius with endpoint $\left(\frac{4}{3}, 5\right)$?

- A) $x^2 + (y - 4)^2 = \frac{25}{9}$
- B) $x^2 + (y + 4)^2 = \frac{25}{9}$
- C) $x^2 + (y - 4)^2 = \frac{5}{3}$
- D) $x^2 + (y + 4)^2 = \frac{3}{5}$

25

$$h = -4.9t^2 + 25t$$

The equation above expresses the approximate height h , in meters, of a ball t seconds after it is launched vertically upward from the ground with an initial velocity of 25 meters per second. After approximately how many seconds will the ball hit the ground?

- A) 3.5
- B) 4.0
- C) 4.5
- D) 5.0

26

Katarina is a botanist studying the production of pears by two types of pear trees. She noticed that Type A trees produced 20 percent more pears than Type B trees did. Based on Katarina's observation, if the Type A trees produced 144 pears, how many pears did the Type B trees produce?

- A) 115
- B) 120
- C) 124
- D) 173

27

A square field measures 10 meters by 10 meters. Ten students each mark off a randomly selected region of the field; each region is square and has side lengths of 1 meter, and no two regions overlap. The students count the earthworms contained in the soil to a depth of 5 centimeters beneath the ground's surface in each region. The results are shown in the table below.

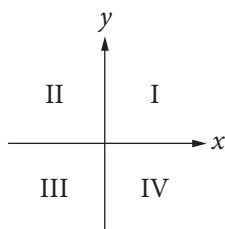
Region	Number of earthworms	Region	Number of earthworms
A	107	F	141
B	147	G	150
C	146	H	154
D	135	I	176
E	149	J	166

Which of the following is a reasonable approximation of the number of earthworms to a depth of 5 centimeters beneath the ground's surface in the entire field?

- A) 150
- B) 1,500
- C) 15,000
- D) 150,000



28



If the system of inequalities $y \geq 2x + 1$ and $y > \frac{1}{2}x - 1$ is graphed in the xy -plane above, which quadrant contains no solutions to the system?

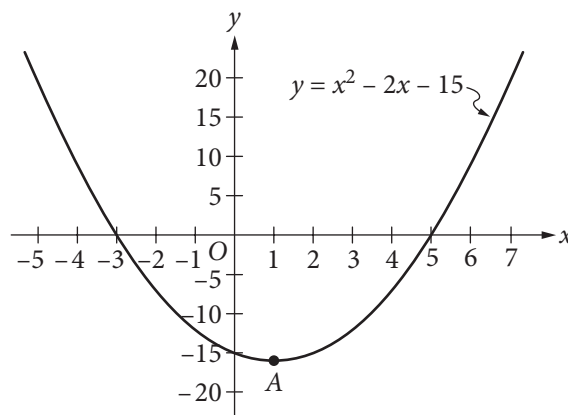
- A) Quadrant II
- B) Quadrant III
- C) Quadrant IV
- D) There are solutions in all four quadrants.

29

For a polynomial $p(x)$, the value of $p(3)$ is -2 . Which of the following must be true about $p(x)$?

- A) $x - 5$ is a factor of $p(x)$.
- B) $x - 2$ is a factor of $p(x)$.
- C) $x + 2$ is a factor of $p(x)$.
- D) The remainder when $p(x)$ is divided by $x - 3$ is -2 .

30



Which of the following is an equivalent form of the equation of the graph shown in the xy -plane above, from which the coordinates of vertex A can be identified as constants in the equation?

- A) $y = (x + 3)(x - 5)$
- B) $y = (x - 3)(x + 5)$
- C) $y = x(x - 2) - 15$
- D) $y = (x - 1)^2 - 16$


DIRECTIONS

For questions 31–38, solve the problem and enter your answer in the grid, as described below, on the answer sheet.

- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately. You will receive credit only if the circles are filled in correctly.
- Mark no more than one circle in any column.
- No question has a negative answer.
- Some problems may have more than one correct answer. In such cases, grid only one answer.
- Mixed numbers** such as $3\frac{1}{2}$ must be gridded as 3.5 or $7/2$. (If

3	1	/	2
☐	☐	☐	☐

 is entered into the grid, it will be interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)
- Decimal answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid.

Write answer in boxes. →

Answer: $\frac{7}{12}$

7	/	1	2
☐	☐	☐	☐
☐	☐	☐	☐
1	0	0	0
1	1	☐	1
2	2	2	☐
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
☐	7	7	7
8	8	8	8
9	9	9	9

← Fraction line

Grid in result.

Answer: 2.5

	2	.	5
☐	☐	☐	☐
☐	☐	☐	☐
☐	0	0	0
1	1	1	1
2	☐	2	2
3	3	3	3
4	4	4	4
5	5	5	☐
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

← Decimal point

Acceptable ways to grid $\frac{2}{3}$ are:

	2	/	3
☐	☐	☐	☐
☐	0	0	0
1	1	1	1
2	☐	2	2
3	3	3	☐
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8

.	6	6	6
☐	☐	☐	☐
☐	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	☐	☐	☐
7	7	7	7
8	8	8	8

.	6	6	7
☐	☐	☐	☐
☐	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	☐	☐	6
7	7	7	☐
8	8	8	8

Answer: 201 – either position is correct

	2	0	1
☐	☐	☐	☐
☐	0	☐	0
1	1	1	☐
2	☐	2	2
3	3	3	3

2	0	1	
☐	☐	☐	☐
☐	☐	0	0
1	1	☐	1
☐	2	2	2
3	3	3	3

NOTE: You may start your answers in any column, space permitting. Columns you don't need to use should be left blank.



31

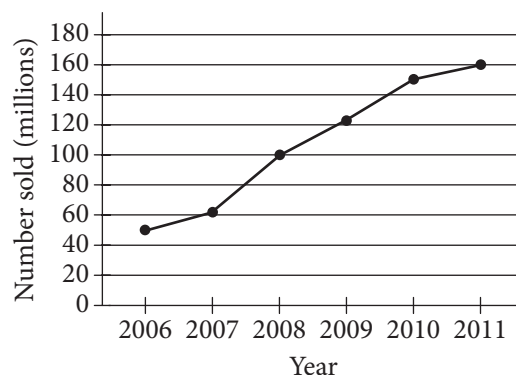
Wyatt can husk at least 12 dozen ears of corn per hour and at most 18 dozen ears of corn per hour. Based on this information, what is a possible amount of time, in hours, that it could take Wyatt to husk 72 dozen ears of corn?

32

The posted weight limit for a covered wooden bridge in Pennsylvania is 6000 pounds. A delivery truck that is carrying x identical boxes each weighing 14 pounds will pass over the bridge. If the combined weight of the empty delivery truck and its driver is 4500 pounds, what is the maximum possible value for x that will keep the combined weight of the truck, driver, and boxes below the bridge's posted weight limit?

33

Number of Portable Media Players
Sold Worldwide Each Year from 2006 to 2011



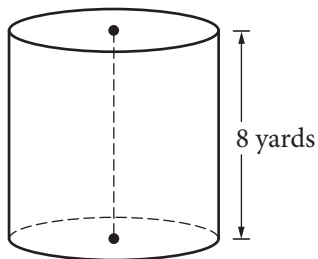
According to the line graph above, the number of portable media players sold in 2008 is what fraction of the number sold in 2011?

34

A local television station sells time slots for programs in 30-minute intervals. If the station operates 24 hours per day, every day of the week, what is the total number of 30-minute time slots the station can sell for Tuesday and Wednesday?



35



A dairy farmer uses a storage silo that is in the shape of the right circular cylinder above. If the volume of the silo is 72π cubic yards, what is the diameter of the base of the cylinder, in yards?

36

$$h(x) = \frac{1}{(x-5)^2 + 4(x-5) + 4}$$

For what value of x is the function h above undefined?

Questions 37 and 38 refer to the following information.

Jessica opened a bank account that earns 2 percent interest compounded annually. Her initial deposit was \$100, and she uses the expression $\$100(x)^t$ to find the value of the account after t years.

37

What is the value of x in the expression?

38

Jessica's friend Tyshaun found an account that earns 2.5 percent interest compounded annually. Tyshaun made an initial deposit of \$100 into this account at the same time Jessica made a deposit of \$100 into her account. After 10 years, how much more money will Tyshaun's initial deposit have earned than Jessica's initial deposit? (Round your answer to the nearest cent and ignore the dollar sign when gridding your response.)

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section.

Scoring Your SAT[®] Practice Test #1

Congratulations on completing an SAT[®] practice test. To score your test, use these instructions and the conversion tables and answer key at the end of this document.

Scores Overview

The redesigned SAT will provide more information about your learning by reporting more scores than ever before. Each of the redesigned assessments (SAT, PSAT/NMSQT[®], PSAT[™] 10, and PSAT[™] 8/9) will report test scores and cross-test scores on a common scale. Additionally, subscores will be reported to provide additional diagnostic information to students, educators, and parents. For more details about scores, visit collegereadiness.collegeboard.org/sat/scores.

The practice test you completed was written by the College Board's Assessment Design & Development team using the same processes and review standards used when writing the actual SAT. Everything from the layout of the page to the construction of the questions accurately reflects what you'll see on test day.

How to Calculate Your Practice Test Scores

GET SET UP

- ❶ You'll need the answer sheet that you bubbled in while taking the practice test. You'll also need the conversion tables and answer key at the end of this document.
- ❷ Using the answer key, count up your total correct answers for each section. You may want to write the number of correct answers for each section at the bottom of that section in the answer key.
- ❸ Using your marked-up answer key and the conversion tables, follow the directions to get all of your scores.

SAT Practice Test #1: Worksheets

ANSWER KEY

Reading Test Answers

1 B	12 B	23 D	34 C	45 D
2 B	13 D	24 D	35 B	46 C
3 C	14 A	25 C	36 D	47 B
4 A	15 A	26 B	37 C	48 A
5 C	16 C	27 D	38 C	49 D
6 D	17 C	28 C	39 B	50 B
7 D	18 D	29 A	40 C	51 D
8 B	19 A	30 A	41 B	52 A
9 C	20 B	31 D	42 B	
10 B	21 A	32 B	43 A	
11 A	22 B	33 A	44 A	

READING TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Writing and Language Test Answers

1 D	12 B	23 D	34 A
2 B	13 A	24 D	35 A
3 A	14 B	25 B	36 B
4 C	15 C	26 A	37 D
5 C	16 C	27 B	38 C
6 D	17 C	28 C	39 A
7 B	18 A	29 B	40 B
8 C	19 D	30 D	41 B
9 A	20 D	31 C	42 C
10 A	21 B	32 A	43 D
11 B	22 D	33 A	44 D

WRITING AND
LANGUAGE TEST
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test No Calculator Answers

1 D	11 D
2 A	12 D
3 C	13 B
4 B	14 A
5 C	15 D
6 A	16 2
7 B	17 1600
8 C	18 7
9 B	19 $\frac{4}{5}$ or 0.8
10 A	20 100

MATH TEST
NO CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

Math Test Calculator Answers

1 B	11 A	21 C	31 Any number between 4-6, inclusive
2 C	12 C	22 B	32 107
3 D	13 C	23 B	33 $\frac{5}{8}$ or 0.625
4 C	14 C	24 A	34 96
5 D	15 A	25 D	35 6
6 D	16 C	26 B	36 3
7 C	17 B	27 C	37 1.02
8 D	18 A	28 C	38 6.11
9 A	19 B	29 D	
10 B	20 D	30 D	

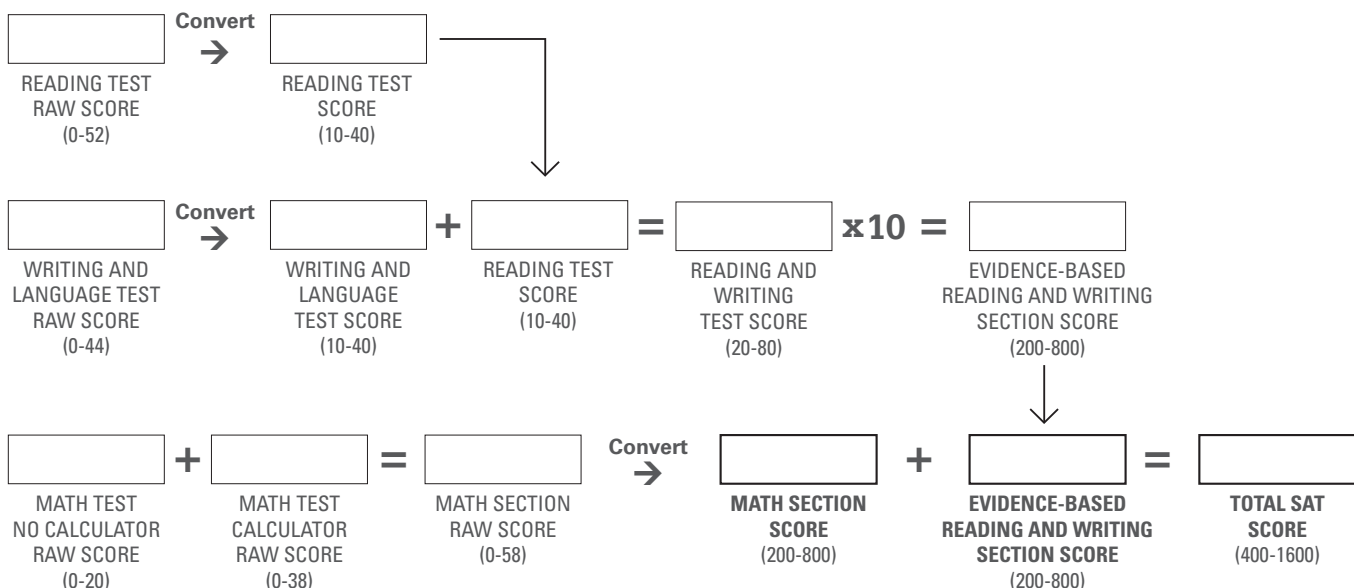
MATH TEST
CALCULATOR
RAW SCORE
(NUMBER OF
CORRECT ANSWERS)

SAT Practice Test #1: Worksheets

RAW SCORE CONVERSION TABLE 1 SECTION AND TEST SCORES

Raw Score (# of correct answers)	Math Section Score	Reading Test Score	Writing and Language Test Score	Raw Score (# of correct answers)	Math Section Score	Reading Test Score	Writing and Language Test Score
0	200	10	10	30	530	28	29
1	200	10	10	31	540	28	30
2	210	10	10	32	550	29	30
3	230	11	10	33	560	29	31
4	240	12	11	34	560	30	32
5	260	13	12	35	570	30	32
6	280	14	13	36	580	31	33
7	290	15	13	37	590	31	34
8	310	15	14	38	600	32	34
9	320	16	15	39	600	32	35
10	330	17	16	40	610	33	36
11	340	17	16	41	620	33	37
12	360	18	17	42	630	34	38
13	370	19	18	43	640	35	39
14	380	19	19	44	650	35	40
15	390	20	19	45	660	36	
16	410	20	20	46	670	37	
17	420	21	21	47	670	37	
18	430	21	21	48	680	38	
19	440	22	22	49	690	38	
20	450	22	23	50	700	39	
21	460	23	23	51	710	40	
22	470	23	24	52	730	40	
23	480	24	25	53	740		
24	480	24	25	54	750		
25	490	25	26	55	760		
26	500	25	26	56	780		
27	510	26	27	57	790		
28	520	26	28	58	800		
29	520	27	28				

CONVERSION EQUATION 1 SECTION AND TEST SCORES



SAT Practice Test #1: Worksheets

RAW SCORE CONVERSION TABLE 2 SUBSCORES

Raw Score (# of correct answers)	Expression of Ideas	Standard English Conventions	Heart of Algebra	Problem Solving and Data Analysis	Passport to Advanced Math	Words in Context	Command of Evidence
0	1	1	1	1	1	1	1
1	1	1	1	1	3	1	1
2	1	1	2	2	5	2	2
3	2	2	3	3	6	3	3
4	3	2	4	4	7	4	4
5	4	3	5	5	8	5	5
6	5	4	6	6	9	6	6
7	6	5	6	7	10	6	7
8	6	6	7	8	11	7	8
9	7	6	8	8	11	8	8
10	7	7	8	9	12	8	9
11	8	7	9	10	12	9	10
12	8	8	9	10	13	9	10
13	9	8	9	11	13	10	11
14	9	9	10	12	14	11	12
15	10	10	10	13	14	12	13
16	10	10	11	14	15	13	14
17	11	11	12	15		14	15
18	11	12	13			15	15
19	12	13	15				
20	12	15					
21	13						
22	14						
23	14						
24	15						

CONVERSION EQUATION 2 SUBSCORES

HEART OF ALGEBRA
 RAW SCORE
 (0-19)

Convert →

HEART OF ALGEBRA
 SUBSCORE
 (1-15)

EXPRESSION
 OF IDEAS
 RAW SCORE
 (0-24)

Convert →

EXPRESSION
 OF IDEAS
 SUBSCORE
 (1-15)

COMMAND OF
 EVIDENCE
 RAW SCORE
 (0-18)

Convert →

COMMAND OF
 EVIDENCE
 SUBSCORE
 (1-15)

PROBLEM
 SOLVING AND DATA
 ANALYSIS RAW SCORE
 (0-17)

Convert →

PROBLEM
 SOLVING AND DATA
 ANALYSIS SUBSCORE
 (1-15)

STANDARD ENGLISH
 CONVENTIONS
 RAW SCORE
 (0-20)

Convert →

STANDARD ENGLISH
 CONVENTIONS
 SUBSCORE
 (1-15)

WORDS IN
 CONTEXT
 RAW SCORE
 (0-18)

Convert →

WORDS IN
 CONTEXT
 SUBSCORE
 (1-15)

PASSPORT TO
 ADVANCED MATH
 RAW SCORE
 (0-16)

Convert →

PASSPORT TO
 ADVANCED MATH
 SUBSCORE
 (1-15)

SAT Practice Test #1: Worksheets

RAW SCORE CONVERSION TABLE 3 CROSS-TEST SCORES

Raw Score (# of correct answers)	Analysis in History/ Social Studies Cross-Test Score	Analysis in Science Cross-Test Score	Raw Score (# of correct answers)	Analysis in History/ Social Studies Cross-Test Score	Analysis in Science Cross-Test Score
0	10	10	18	28	26
1	10	11	19	29	27
2	11	12	20	30	27
3	12	13	21	30	28
4	14	14	22	31	29
5	15	15	23	32	30
6	16	16	24	32	30
7	17	17	25	33	31
8	18	18	26	34	32
9	20	19	27	35	33
10	21	20	28	35	33
11	22	20	29	36	34
12	23	21	30	37	35
13	24	22	31	38	36
14	25	23	32	38	37
15	26	24	33	39	38
16	27	24	34	40	39
17	28	25	35	40	40

CONVERSION EQUATION 3 CROSS-TEST SCORES

	Analysis in History/Social Studies		Analysis in Science	
Test	Questions	Raw Score	Questions	Raw Score
Reading Test	11-21; 32-41		22-31; 42-52	
Writing and Language Test	1-2; 5-6; 9-10		12-14; 20-22	
Math Test No Calculator	7, 11		6	
Math Test Calculator	7; 22-23; 33; 37-38		6; 9; 14; 21; 25-27	
Total				

