Name_____SAT Mathematics REVIEW

Question 1

The Municipal Electric Company charges each household \$0.15 per kilowatt-hour of electricity plus a flat monthly service fee of \$16. If a household uses 30 kilowatt-hours of electricity and is charged \$$P$ in a given month, which of the following equations is true?

A) $0.15(30) + 16 = P$

B) $0.15P + 16 = 30$

C) $\frac{30}{0.15} + 16 = P$

D) $\frac{0.15}{P} + 16 = 30$

Question 2

The bird department of a pet store has 12 canaries, 30 finches, and 18 parrots. If the pet store purchased n more finches, then 80% of its birds would be finches. Which of the following equations must be true?

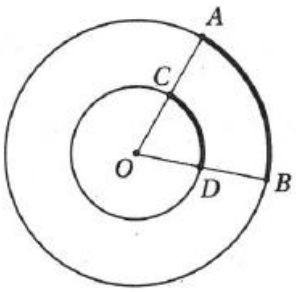
A) $\frac{1}{2} + n = \frac{4}{5}$

B) $\frac{30+n}{60} = \frac{4}{5}$

C) $\frac{30+n}{60+n} = \frac{4}{5}$

D) $\frac{n}{60+n} = \frac{4}{5}$

Question 3



Note: Figure not drawn to scale.

The figure above shows two concentric circles with center O. If $OD = 3$, $DB = 5$, and the length of arc AB is 5π, what is the length of arc CD?

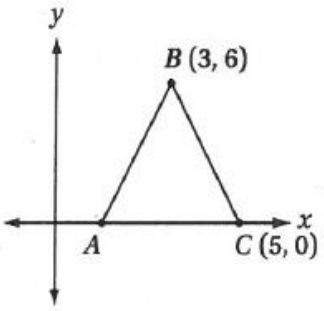
A) $\frac{7}{4}\pi$

B) $\frac{15}{8}\pi$

C) 3π

D) $\frac{25}{8}\pi$

Question 4



Note: Figure not drawn to scale.

In the figure above, $AB = BC$. If $\overline{AB}$ has a slope of m and $\overline{BC}$ has a slope of n, what is the value of mn?

A) -9

B) $-\frac{1}{9}$

C) $\frac{1}{9}$

D) 9

Question 5

The median of the numbers x, 10, and 12 is 12. Which of the following CANNOT be the value of x?

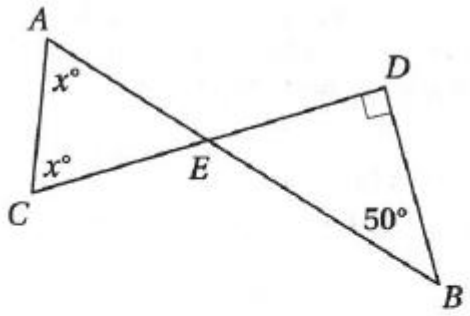
A) 8

B) 12

C) 16

D) 20

Question 7



In the figure above, line segments $\overline{AB}$ and $\overline{CD}$ intersect at point E. What is the value of x?

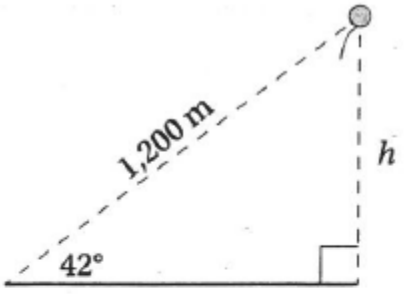
A) 60°

B) 65°

C) 70°

D) 75°

Question 6



Alyssa determines that a floating balloon is 1,200 meters away from her at an angle of 42° from the ground, as in the figure above. What is the height, h, of the balloon from the ground? ($\sin 42° = 0.669$, $\cos 42° = 0.743$, $\tan 42° = 0.900$)

A) 802.8 meters

B) 891.6 meters

C) 1,080 meters

D) 1,793 meters

Question 8

If $\frac{5}{m} \leq \frac{2}{3}$, where $m > 0$, what is the least possible value of m?

A) 6.5

B) 7

C) 7.5

D) 8

Question 9

In a survey of 80 students, 55 students stated that they play a varsity sport, and 35 stated that they are taking at least one AP level course. Which of the following statements must be true?

A) At least 10 of these students are both playing a varsity sport and taking at least one AP level course.

B) Less than half of the students who play a varsity sport are also taking at least one AP level course.

C) The number of students who do not play a varsity sport is greater than the number of students who do not take at least one AP level course.

D) At least one student who takes an AP level course does NOT play a varsity sport.

Question 10

Everyone in Niko's class has a different birth date. If Niko is both the 8th oldest person and the 12th youngest person in his class, how many students are in Niko's class?

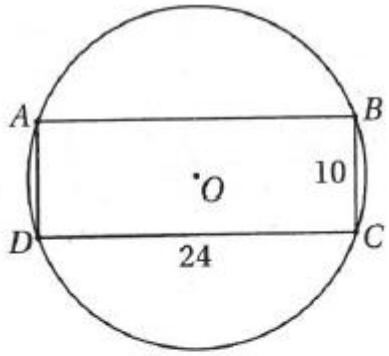
A) 18

B) 19

C) 20

D) 21

Question 11



Note: Figure not drawn to scale.

In the figure above, rectangle $ABCD$ is inscribed in the circle with center O. What is the area of the circle?

A) 26π

B) 121π

C) 144π

D) 169π

Question 12

The average (arithmetic mean) of a set of 3 positive integers is m. If the number 24 is added to this set, what is the average (arithmetic mean) of the new set of numbers?

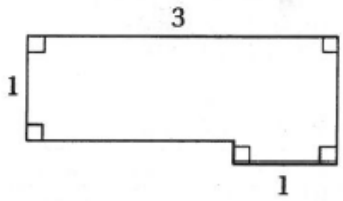
A) $\frac{3m+24}{24}$

B) $\frac{3m+24}{4}$

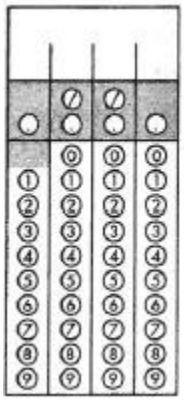
C) $m+8$

D) $\frac{m+24}{4}$

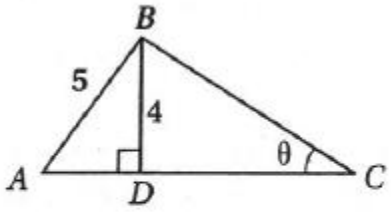
Question 13



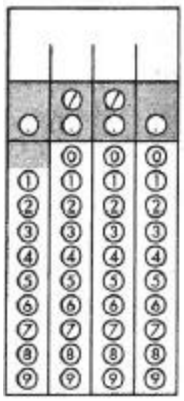
If the area of the figure above is $\frac{16}{5}$ square units, what is its perimeter?



Question 14

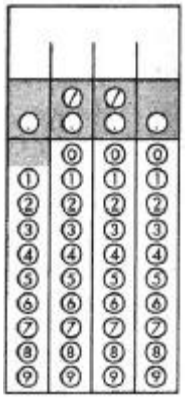


In the figure above, triangle ABC has an area of 19. What is the value of $\tan\theta$?



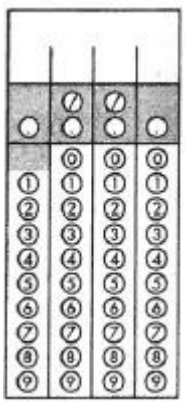
Question 15

In the xy-plane, the graph of the equation $y = 3x^2 - kx - 35$ intersects the x-axis at (5, 0). What is the value of k?



Question 16

If one pound of grain can feed either 5 chickens or 2 pigs, then ten pounds of grain can feed 20 chickens and how many pigs?



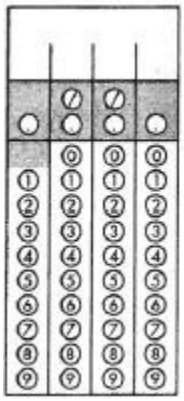
USE THIS TABLE FOR QUESTIONS 17 and 18

Section	Price per Ticket	Number Sold
Front Orchestra	\$60	50
Rear Orchestra	\$50	60
First Mezzanine	\$40	x
Second Mezzanine	\$35	y
Third Mezzanine	\$30	100

The table above shows information about the tickets sold for a recent performance by a theater troupe. The total revenue in ticket sales for this performance was \$15,000.

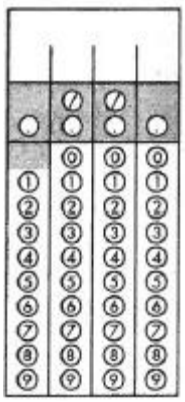
Question 17

If 15 more tickets were sold in the second mezzanine than in the first mezzanine, what is the total number of tickets that were sold for this performance?

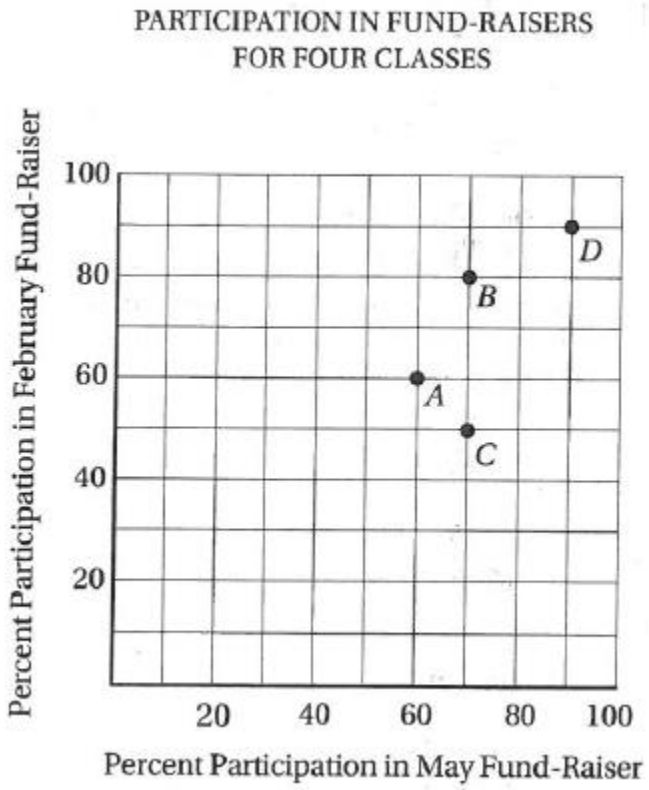


Question 18

Before the tickets for this performance went on sale, a consultant for the theater had predicted that n, the number of tickets sold per section, would vary with p, the price in dollars for a ticket in that section, according to the formula $n = \frac{2,800}{p}$. By how many tickets did this model underestimate the actual total number of tickets sold?



USE THIS GRAPH FOR QUESTIONS 19 and 20



Question 19

Four different classes at Corbett Elementary School participated in two fund-raisers last year, one in February and another in May. The rates of participation for each class are recorded in the graph above. Which class had the greatest change in percent participation from the February fund-raiser to the May fund-raiser?

A) Class A

B) Class B

C) Class C

D) Class D

Question 20

If there were 20 students each in Class A and Class C, and 30 students each in Class B and Class D, how many students participated in the May fund-raiser?

A) 71

B) 72

C) 74

D) 76