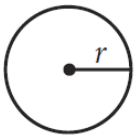
Name: _____ Teacher: _____ Block: _____

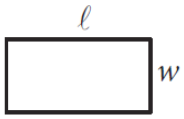
Titan Learning Center
Mathematics SAT Prep
Week 9 Set B

CALCULATOR ALLOWED* – *Multiple Choice

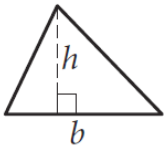
REFERENCE *(This reference sheet is given on the SAT!)*



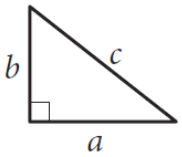
$A = \pi r^2$
$C = 2\pi r$



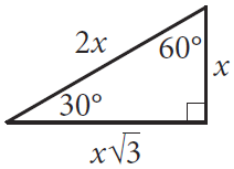
$A = \ell w$

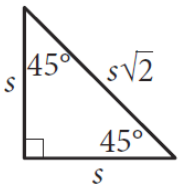


$A = \frac{1}{2}bh$

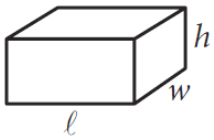


$c^2 = a^2 + b^2$

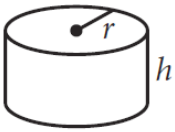




Special Right Triangles

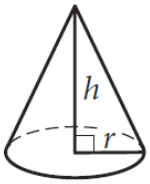


$V = \ell wh$

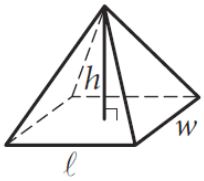


$V = \pi r^2 h$

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



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



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

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.

16

The average annual energy cost for a certain home is $4,334. The homeowner plans to spend $25,000 to install a geothermal heating system. The homeowner estimates that the average annual energy cost will then be $2,712. Which of the following inequalities can be solved to find t, the number of years after installation at which the total amount of energy cost savings will exceed the installation cost?

A) $25{,}000 > (4{,}334 - 2{,}712)\,t$

B) $25{,}000 < (4{,}334 - 2{,}712)\,t$

C) $25{,}000 - 4{,}334 > 2{,}712t$

D) $25{,}000 > \dfrac{4{,}332}{2{,}712}\,t$

17

Population of Greenleaf, Idaho

Year	Population
2000	862
2010	846

The table above shows the population of Greenleaf, Idaho, for the years 2000 and 2010. If the relationship between population and year is linear, which of the following functions P models the population of Greenleaf t years after 2000?

A) $P(t) = 862 - 1.6t$

B) $P(t) = 862 - 16t$

C) $P(t) = 862 + 16(t - 2{,}000)$

D) $P(t) = 862 - 1.6(t - 2{,}000)$

18

Ages of 20 Students Enrolled in a College Class

Age	Frequency
18	6
19	5
20	4
21	2
22	1
23	1
30	1

The table above shows the distribution of ages of the 20 students enrolled in a college class. Which of the following gives the correct order of the mean, median, and mode of the ages?

A) mode < median < mean

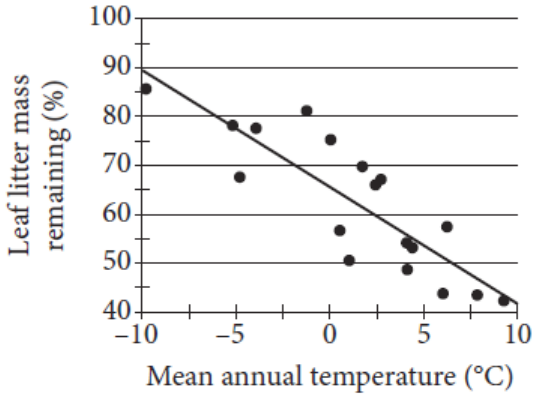
B) mode < mean < median

C) median < mode < mean

D) mean < mode < median

19

The figure below shows the relationship between the percent of leaf litter mass remaining after decomposing for 3 years and the mean annual temperature, in degrees Celsius (°C), in 18 forests in Canada. A line of best fit is also shown.



A particular forest in Canada, whose data is not included in the figure, had a mean annual temperature of −2°C. Based on the line of best fit, which of the following is closest to the predicted percent of leaf litter mass remaining in this particular forest after decomposing for 3 years?

A) 50%

B) 63%

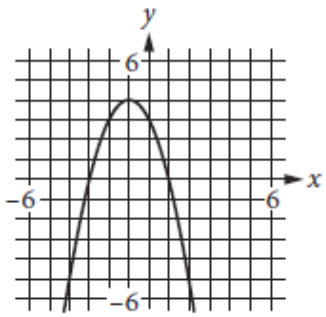
C) 70%

D) 82%

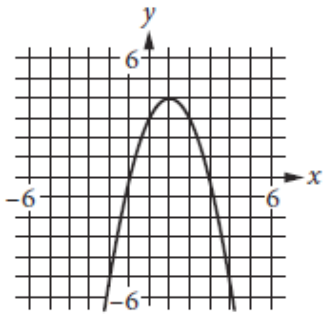
20

The range of the polynomial function f is the set of real numbers less than or equal to 4. If the zeros of f are −3 and 1, which of the following could be the graph of $y = f(x)$ in the xy-plane?

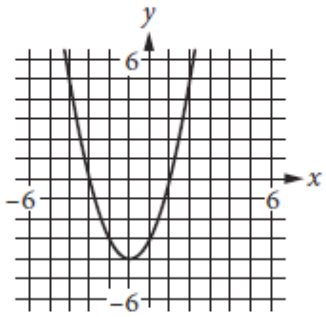
A)



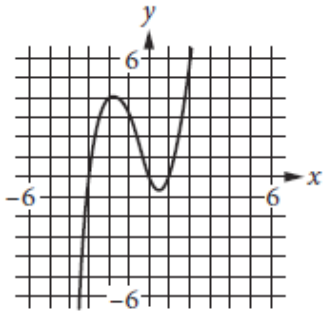
B)



C)



D)



TLC Stamp