SAT2-MATHEMATICS Q&As

SAT Section 2: Mathematics

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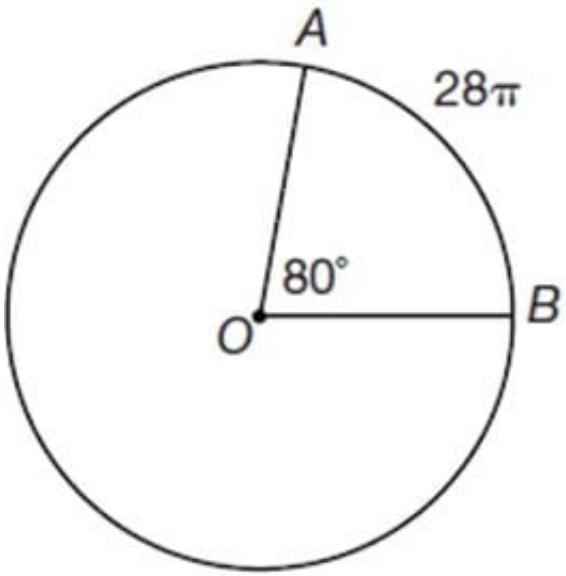
QUESTION 1

SIMULATION



In the circle above, the measure of angle AOB is 80 degrees and the length of arc AB is 28 units. What is the radius of the circle?

A. 63

Correct Answer: A

The size of an intercepted arc is equal to the measure of the intercepting angle divided by 360, multiplied by the circumference of the circle (2r, where r is the radius of the circle):

$$28\pi = \left(\frac{80}{360}\right)(2\pi r),\ 28 = \left(\frac{4}{9}\right)r,\ r = 63$$

units.

QUESTION 2

If 3x-y=2 and 2y-3x-8, which of the following is equal to x/y?

A. $\frac{2}{3}$

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

C. $2\frac{1}{2}$

D. 4

E. 6

A. Option A

B. Option B

C. Option C

D. Option D

E. Option E

Correct Answer: B

$3x-y=2$ for y: $-y=-3x+2$, $y=3x-2$

Solve

Substitute 3x-2 for y in the second equation and solve for x:

$$2(3x-2)-3x=8$$
$$6x-4-3x=8$$
$$3x-4=8$$
$$3x=12$$
$$x=4$$

Substitute the value of x into the first equation to find the value of y:

$$3(4)-y=2$$
$$12-y=2$$
$$y=10$$
$$\frac{x}{y}=\frac{4}{10}=\frac{2}{5}$$

$$x3+\ 7x2\ -8x$$

QUESTION 3

The volume of a glass of water placed in the sun decreases by 20%. If there are 240 mL of water in the glass now, what was the original volume of water in the glass?

A. 192ml

B. 260ml

C. 288ml

D. 300ml

E. 360ml

Correct Answer: D

The original volume of water, x, minus 20% of x, 0.20x, is equal to the current volume of water, 240ml:

$$x - 0.20x = 240\ ml$$
$$0.8x = 240\ ml$$
$$x = 300\ ml$$

QUESTION 4

SIMULATION

$$(3xy+x)\frac{x}{y}$$

What is the value of when x = 2 and y = 5?

A. 4

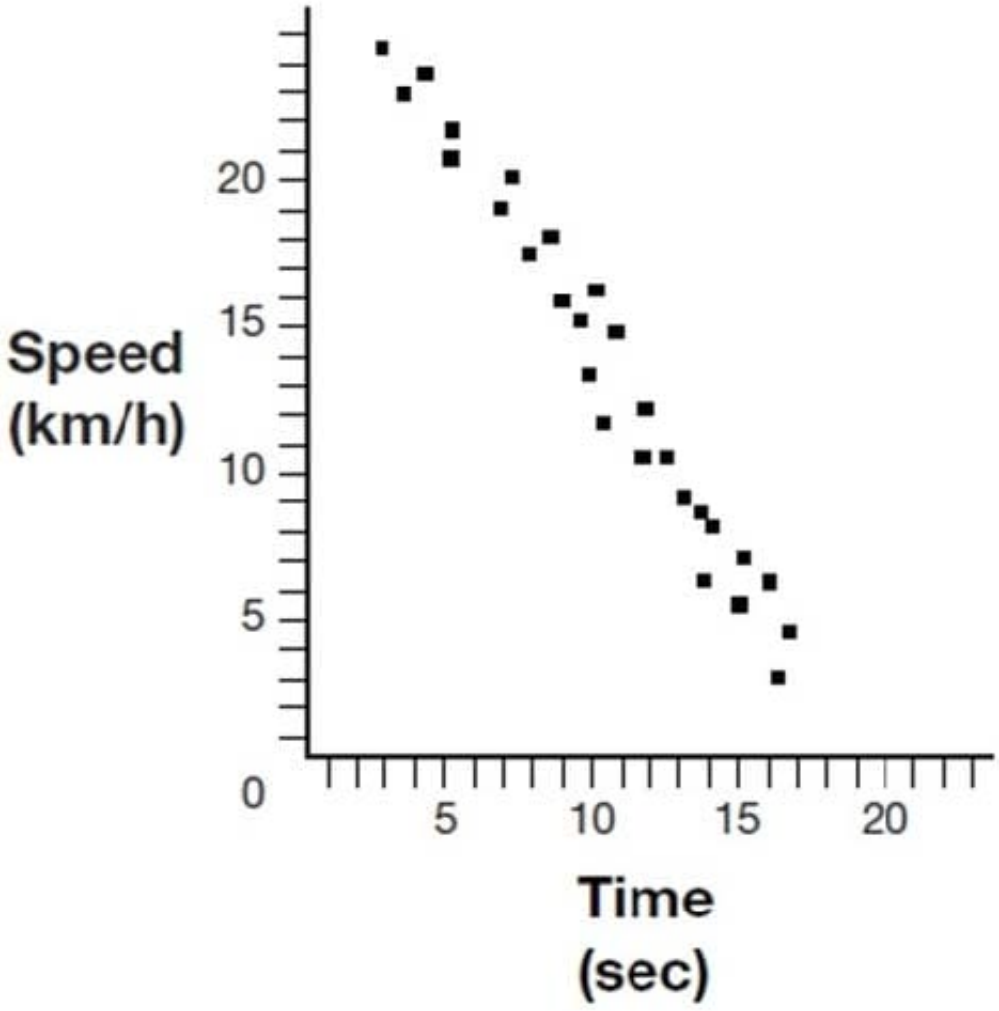
Correct Answer: A

Substitute 2 for x and 5 for

$$y:\{3xy+x\}\frac{x}{y}=\{\{3\}\{2\}\{5\}+2\}\frac{2}{5}=\{30+2\}\frac{2}{5}=32\frac{2}{5}=(\sqrt[5]{32})^2=2^2=4.Or,\ \{3\}\{2\}\{5\}=30,30+2=32,$$

the 5th root of 32 is 2, 2 raised to the 2nd power is 4.

QUESTION 5



The scatter plot above shows the speeds of different runners over time. Which of the following could be the equation of the line of best fit?

A. $s=-2(t-15)$

B. $s=-t+25$

C. $s=\frac{-1}{2}(t-10)$

D. $s=\frac{-1}{2}(t-20)$

E. $s=2(t+15)$

A. Option A

B. Option B

C. Option C

D. Option D

E. Option E

Correct Answer: A

Explanation:

If a straight line were drawn through as many of the plotted points as possible, it would have a negative slope. The line slopes more sharply than the line y = –x (a line with a slope of-1), so the line would have a slope more negative than-1. The line would also have a y-intercept well above the x – i-axis. The only equation given with a slope more negative than-1is s=-2(t-15).