

Tackling the Calculator Section of the SAT - Webinar Feb. 2023

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Which of the following expressions is equivalent to

$$\frac{2x^2 - 3x - 2}{x + 2} ?$$

- A) $2x + 1 - \frac{4}{x+2}$
- B) $2x - 1$
- C) $2x - 7 + \frac{12}{x+2}$
- D) $2x - 7 - \frac{16}{x+2}$

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Which expression is equivalent to

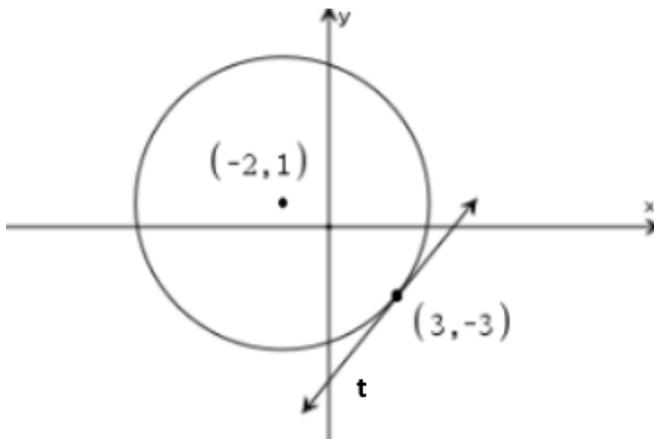
$$4xy + 12xy^2 + 16x^2y$$

- A) $4xy(3y + 4x)$
- B) $4xy(12y + 16x)$
- C) $4xy(1 + 3y + 4x)$
- D) $4xy(1 + 12y + 16x)$

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If $x > 0$ and x is 125% of y , which expression represents y in terms of x ?

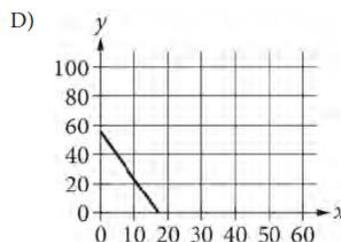
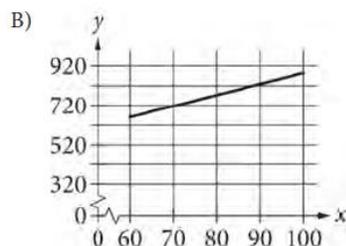
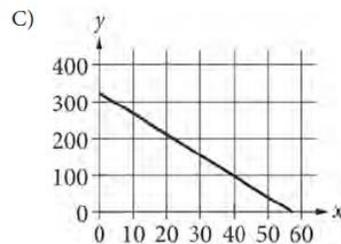
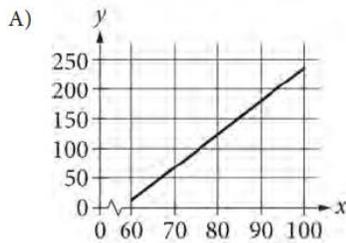
- A) $0.125x$
- B) $0.800x$
- C) $1.25x$
- D) $8.000x$



The circle shown has center $(-2, 1)$. Line t is tangent to this circle at point $(3, -3)$. Which of the following points also lies on line t ?

- A) $(-1, \frac{5}{4})$
- B) $(2, 6)$
- C) $(7, 2)$
- D) $(8, 1)$

The mass y , in grams, of juvenile cod fish x days after hatching can be modeled by the equation $y = 340 + 5.5x$, where $60 < x < 100$. Which graph represents this relationship?



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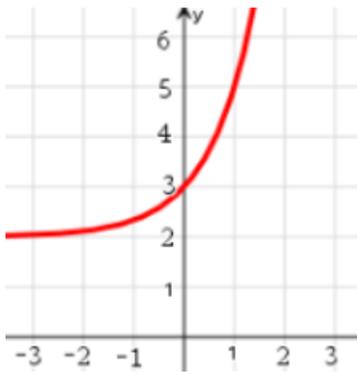
$$x^2 + 8x + b = 0$$

In the given equation, b is a constant. The equation has exactly two distinct real solutions. Which statement about the value of b must be true?

- A) $b = 8$
- B) $b > 16$
- C) $b = 16$
- D) $b < 16$

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Two numbers, a and b , are each greater than zero, and 9 times the square root of a is equal to 16 times the cube root of b . If $a = \frac{3}{4}$, for what value of x is a^x equal to b ?

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The graph of $y = f(x) + 1$ is shown. Which equation defines the function f ?

- A) $f(x) = 2^x + 1$
- B) $f(x) = 3^x + 1$
- C) $f(x) = 2^x + 2$
- D) $f(x) = 3^x + 2$

The tables show the frequencies of the data values.

Data Set P

| Value | Frequency |
|-------|-----------|
| 1 | 1 |
| 2 | 1 |
| 3 | 2 |
| 4 | 5 |
| 5 | 3 |

Data Set O

| Value | Frequency |
|-------|-----------|
| 4 | 1 |
| 5 | 1 |
| 6 | 2 |
| 7 | 5 |
| 8 | 3 |

Which statement best compares the mean a and standard deviation b of data set P with the mean c and standard deviation d of data set Q?

- A) $a < c; b < d$
- B) $a < c; b = d$
- C) $a > c; b = d$
- D) $a > c; b > d$

$$(x - 3)^2 + 12(x - 3) + 36 = 0$$

How many distinct real solutions does the equation have?

- A) Zero
- B) Exactly one
- C) Exactly two
- D) Infinitely many

$$a^b = c^d$$

The given equation relates the distinct positive real numbers a , b , c , and d . Which equation correctly expresses c in terms of a , b , and d ?

- A) $c = \frac{a^b}{d}$
- B) $c = a^{b \cdot d}$
- C) $c = a^{b/d}$
- D) $c = a^{d/b}$

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Which of the following expressions is equivalent to

$$(3\sqrt{x} - \sqrt{y})^{2/5}, \text{ where } x > y \text{ and } y > 0?$$

A) $(9x - y)^5$

B) $\sqrt[5]{9x - y}$

C) $(9x - 6\sqrt{xy} + y)^{1/5}$

D) $\sqrt[5]{9x - 6xy + y}$

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$$|3 - x| + 3|3 - x| = 16$$

What is the positive solution to the given equation?

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$$y = 3x - 2$$

$$y = \frac{-1}{2}x + 5$$

What is the value of y for the given system of equations?

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What is the x -coordinate of the x -intercept of the line with

equation $\frac{5}{7}x + \frac{1}{3}y = 1$ when it is graphed in the

xy -plane?