Math 3 sample questions

2017

1. $\log(x+y) = \log(x) + \log(y)$ is true if

a. $x = y$ b. $x + y = 1$ c. $xy = 0$ d. $y = x(y-1)$

e. Never

2. Let $f(x) = x^2 - 8x + 12$ and let $g(x) = x^2 - x$. The equation $f\big(g(x)\big) = 0$ has four zeros a, b, c, d then the value of $a + b + c + d =$

a. 6 b. 8 c. 2 d. -2 e. None of the above

3. Assume $f(x)$ and $g(x)$ are inverses of one another and drawn on the same graph with the same scale on both the horizontal and vertical axis. Which of the following would be true?

a. $g(x)$ is the same as $f(x)$, translated up 3 units.

b. By rotating $f(x)$ 90° clockwise around the origin, you would get $g(x)$.

c. By rotating $f(x)$ 180° clockwise around the origin, you would get $g(x)$.

d. By reflecting $f(x)$ over the line $y = x$, you would get $g(x)$.

e. None of the above

4. Solve for x: $10^{\log(x^3+6x-1)} = x^3 - x^2 - 9$

a. -2 b. 2 c. -4 d. 4 e. None of the above

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5. Two normal curves have been graphed on the same axis. They look identical in shape, but one of them is translated 2 units to the left, what do you know about the two sets of data?

a. The sets of data both have a mean of 2

b. The sets of data both have a standard deviation of 2

c. The sets of data have means that have a difference of 2

d. The sets of data have standard deviations that have a difference of 2

e. None of the above