

1. If $2^{20} + 4^{10} = 2^x$ then the value of x is
- a. 30 b. 40 c. 29 d. 21
- e. None of the above
2. If $f(x) = 3x^2 - 3x + 3$ and $g(x) = 2x + 5$, then $f(-x) \times g(2x) =$
- a. $12x^3 - 9x^2 - 11x + 15$
- b. $12x^3 + 27x^2 + 27x + 15$
- c. $12x^3 - 27x^2 + 27x + 15$
- d. $-12x^3 + 27x^2 + 27x + 15$
3. The total area of a rectangle is $4x^2 - 9y^4$. Which factors represents the length times width?
- a. $(4x - 9y)(4x + 9y)$ b. $(2x - 3y^2)(2x + 3y^2)$ c. $(2x^2 - 3y^2)(2x^2 + 3y^2)$
- d. $(4x - 9y^2)(4x + 9y^2)$ e. None of the above
4. If a linear equation has a slope of 2 and a y-intercept of -5, then what is the end behavior as $x \rightarrow \infty$?
- a. $f(x) \rightarrow \infty$ b. $f(x) \rightarrow -\infty$ c. $f(x) \rightarrow 2$ d. $f(x) \rightarrow -5$
- e. None of the above
- c. 3 d. 4
- e. None of the above
5. Which is the inverse of $f(x) = \log(3x) + 2$.
- a. $y = \frac{10^x}{3} + 2$ b. $-\log(\frac{1}{3}x) - 2$ c. $y = \frac{10^{x-2}}{3}$ d. $y = 10^{3x} + 2$
- e. None of the above