

MATH U131 Quiz A review

No calculators are permitted.

In questions 1–9, 12 and 13, circle the letter of the correct answer.

1. Simplify the expression: $3x^3y^2(2xy^5)^3$.

- A. $18x^4y^7$ B. $24x^6y^{17}$ C. $6x^6y^{17}$ D. $18x^6y^{10}$

2. Simplify the expression: $\frac{2(ab^2)^{-2}}{4a^{-3}b^4}$

- A. $\frac{a}{2}$ B. $2ab^{-8}$ C. $\frac{a}{2b^8}$ D. $\frac{b^8}{2a}$

3. Simplify: $(-5x^3 - x) - (7x - 8 - 6x^3)$

- A. $8x^3 + 6x - 8$ B. $-12x^3 - 7x - 8$ C. $-11x^3 + 8x + 8$ D. $x^3 - 8x + 8$

4. Simplify: $2v^3(4v^4 + 5v^3 + 3v + 2)$

- A. $8v^7 + 3v^6 + 3v^4 + 2v^3$ B. $8v^{12} + 10v^9 + 10v^3$ C. $6v^7 + 7v^6 + 5v^4 + 4v^3$ D. $8v^7 + 10v^6 + 6v^4 + 4v^3$

5. Perform the operation and simplify the expression: $(\sqrt[3]{x^4})^3$.

- A. x^{12} B. $x^{9/4}$ C. $x^{3/4}$ D. x^4

6. Perform the operations and identify the result written in standard form: $(3x - 5)(3x - 4)$.

- A. $9x^2 + 3x + 19$ B. $9x^2 - 27x + 19$ C. $9x^2 + 26x + 20$ D. $9x^2 - 27x + 20$

7. Perform the operation and identify the result written in standard form: $\frac{28x^7 + 35x^3 + 35x^2}{7x^5}$

- A. $28x^7 + 35x^2 + 5$ B. $4x^2 + \frac{5}{x^2} + \frac{5}{x^3}$ C. $4x^2 + 35x^3 + 35x^2$ D. $4x^2 + 5x^2 + 5x^3$

8. If $f(x) = -x^2 - 4x + 4$, then $f(-3)$ is equal to:
A. -17 B. 7 C. 1 D. 10 E. None of the above
9. Find the slope of the line through the points $(-8, -9)$ and $(-3, -5)$.
A. $-14/11$ B. $4/5$ C. $14/11$ D. $5/4$ E. None of the above
10. Solve the equation $6x - 9 = 11 - 2x$. Show work. Write your answer(s) as a fraction or a decimal.
11. Find an equation of the line that passes through the points $(20, -16)$ and $(-30, -1)$. Show work.
12. Factor completely: $5x^2 + 17x + 6$.
A. $(5x - 2)(x - 3)$ B. $(5x + 3)(x + 2)$ C. $(x + 3)(5x - 2)$ D. $(5x + 6)(x + 1)$ E. None of the above
13. The solution of the equation: $500(1.06)^t = 1000$ is, $t =$:
A. $\frac{2}{1.06}$ B. $\frac{\ln(1.06)}{\ln(2)}$ C. $\ln\left(\frac{2}{1.06}\right)$ D. $\frac{\ln(2)}{\ln(1.06)}$ E. None of the above