

Algebra and Calculus: Quiz 1

Name/NetID: _____

Complete all problems.

1. For **multiple choice** problems, circle the letter corresponding to the correct answer.
2. For **true or false** problems, indicate whether you believe the statement is true or false and put a box around your answer (as shown).
3. For **free response**, show all work and put a around your final answer.

Good luck!

1. Simplify: $\frac{3}{11} - \frac{\frac{2}{5}}{\frac{2}{7} - \frac{1}{3}}$.

- (a) $\frac{42}{5}$
- (b) $-\frac{42}{5}$
- (c) $-\frac{477}{55}$
- (d) $\frac{21}{11}$
- (e) $\frac{477}{55}$

2. Factor completely: $(2a + 1)^2 - 2(a + 1)^2 + 1$

- (a) $2a^2$
- (b) a^2
- (c) $-a^2$
- (d) $-2a^2$
- (e) $2a^2 - 1$

3. Simplify: $\frac{1}{x^2 - 4} - \frac{1}{(x + 2)^2}$

(a) $\frac{1}{(x + 2)^2(x - 2)}$

(b) $\frac{2}{(x + 2)^2(x - 2)}$

(c) $\frac{4}{(x + 2)^2(x - 2)}$

(d) $\frac{4}{(x + 2)^2(x^2 - 4)}$

(e) $\frac{4}{(x + 2)^3}$

4. Eliminate the negative exponents and simplify: $\left(\frac{q^{-1}r^{-1}s^{-3}}{q^{-7}r^{-1}s^2}\right)^{-1}$

(a) q^6s^5

(b) $\frac{1}{q^6s^5}$

(c) $\frac{q^6}{s^5}$

(d) $\frac{s^5}{q^6}$

(e) $\frac{q^6r}{s^5}$

5. Simplify, showing all steps: $\frac{2(1 + 2x)^{\frac{1}{2}} + (1 + 2x)^{-\frac{1}{2}}}{8x^2 + 10x + 3}$