

---

Follow all directions. This assignment is to be completed in pencil and with all work shown in the space provided. Unless otherwise specified, give exact answers. Box your final answer. Work that is unreadable will be counted as incorrect.

---

1. Reduce to Lowest Terms.

(a)  $\frac{x - 4}{-7x + 28}$

(b)  $\frac{x^3 + 4x^2 - 5x}{x^3 - x}$

2. Compute as indicated. Write results in lowest terms.

(a)  $\frac{a^2 - 4a + 4}{a^2 - 9} \cdot \frac{a^2 - 2a - 3}{a^2 - 4}$

(b)  $\frac{xy - 3x + 2y - 6}{x^2 - 3x - 10} \div \frac{xy - 3x}{xy - 5y}$

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

(d)  $\frac{y+1}{y^2+y-30} - \frac{2}{y+6}$

3. Simplify the compound rational expression:  $\frac{\frac{2}{3-x} + \frac{3}{x-3}}{\frac{4}{x} + \frac{5}{x-3}}$

4. **Challenge Question!** One of these expressions is *not* equal to the others. Identify which and explain why.

- (a)  $\frac{20n}{10n}$
- (b)  $20 \cdot n \div 10 \cdot n$
- (c)  $20n \cdot \frac{1}{10n}$
- (d)  $\frac{20}{10} \cdot \frac{n}{n}$