

Vital Errors Practice Problems

1. Simplify

$$\frac{x + y}{x^3 - xy^2}$$

2. Simplify

$$\frac{a - b}{\frac{1}{b} - \frac{1}{a}}$$

3. Simplify

$$\frac{a + ba}{a(a + b)}$$

4. Express as a single fraction + simplify, if possible

$$\frac{5}{t + 5} + \frac{2s}{t - 5}$$

5. Express as a single fraction + simplify, if possible

$$\frac{1}{z + 2} - \frac{1}{z + 4}$$

6. Simplify

$$\frac{\frac{4}{x} - x}{\frac{2}{x} + 2}$$

7. Simplify

$$\frac{\frac{1}{x^3} - \frac{1}{y^2}}{\frac{1}{y} - \frac{1}{x}}$$

8. Get rid of negative exponents and simplify

$$\frac{a^{-1}b + b^{-2}}{a + b}$$

9. Get rid of negative exponents and simplify

$$xy^{-1} + x^{-1}y + (xy)^{-1}$$

10. Simplify

$$\left(\frac{a + b}{c}\right)^3 \left(\frac{c^2}{a^3 + b^3}\right)$$

11. Simplify

$$(27a^3b^{10})^{\frac{1}{3}}$$

12. Rewrite using fractional exponents

$$(\sqrt[4]{7xy^2})^{\frac{1}{3}}$$

13. Rewrite without fractional exponents and simplify

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

14. Simplify

$$(x^{\frac{2}{3}}x^{\frac{4}{5}})^{10}$$

15. Simplify

$$\frac{x^{3k} - 3x^k}{x^k}$$

16. Simplify

$$(x^2b^3t^4)^3(x^3b^{-1}t^{\frac{1}{2}})^7$$

17. Simplify

$$(a + \sqrt{b})(2a - \sqrt{b})$$

18. Simplify

$$(\sqrt{a} - \sqrt[3]{b})(\sqrt[3]{a} - \sqrt{b})$$

19. Factor

$$x^3 - 13x^2 + 40x$$

20. Factor

$$x^2 - 2$$

21. Factor

$$9 - (x - 4)^2$$

22. Write without negative exponents and simplify

$$\left(\frac{x^2z^3}{2x^{-2}z^2 - xz^{-1}}\right)^{-2}$$