Intermediate Algebra
Review for Test 2
Luczak

Perform the indicated operations. Leave answers in simplest form.

1. $\dfrac{x-4}{x^2-4} \div \dfrac{x^2-3x-4}{x^2+5x+6}$ 2. $\dfrac{3}{x-1}+\dfrac{x}{x+2}$ 3. $\dfrac{1}{x^2-1}-\dfrac{2}{(x+1)^2}$

Simplify the compound fraction. Leave answers in simplest form.

4. $\dfrac{\frac{x}{y}+1}{1-\frac{y}{x}}$ 5. $\dfrac{\frac{1}{a+h}-\frac{1}{a}}{h}$

Assume all variables represent positive values.
Simplify the following. Do not leave negative exponents.

6. $\dfrac{(xy)^3}{(x^4y^5)^2} =$ 7. $\left(\dfrac{4}{9}\right)^{\frac{1}{2}} =$ 8. $\dfrac{(27x^6)^{\frac{1}{3}}}{x^{-3}} =$ 9. $\left(\dfrac{x^2y^3}{2y^{-1}}\right)^2 =$

10. $(81x^8)^{\frac{1}{4}}(16x^{10})^{\frac{1}{2}} =$ 11. $\dfrac{x^{\frac{1}{2}}x^{-\frac{1}{3}}}{x^{-\frac{3}{2}}} =$

12.Write in radical form: $-8(x^2y)^{\frac{2}{3}} =$

13. Write in rational exponent form: $3\sqrt[5]{x^2} =$

Simplify the following. Assume all variables represent positive real numbers. Leave all answers in simplest radical form.

14. $\dfrac{x^2}{3y^3}\sqrt[4]{\dfrac{16y^8}{x^{24}}} =$ 15. $-m\sqrt[5]{3^6m^7n^{12}} =$

16. $\sqrt{\dfrac{3x^3}{18x^5y^4}} =$ 17. $\sqrt[3]{16x^{10}y^{18}} =$

18. $\left(\sqrt[3]{16xy^2}\right)\left(\sqrt[3]{-x^2y^4}\right) =$

19. $\dfrac{3x}{\sqrt{xy}} =$

20. $\dfrac{2}{\sqrt[3]{xy^2}} =$

Perform the indicated operations. Leave answer in simplest radical form.

21. $\sqrt[3]{3x^2y}\left(\sqrt[3]{9xy^2} + \sqrt[3]{xy}\right) =$

22. $\left(\sqrt{4x} - \sqrt{9y}\right)^2 =$

23. $\left(\sqrt{5y} - \sqrt{3x}\right)\left(\sqrt{5y} + \sqrt{3x}\right) =$

24. $\dfrac{\sqrt{x}}{\sqrt{x} - 2} =$

25. $\dfrac{2\sqrt{x} + 3\sqrt{y}}{4\sqrt{x} + 5\sqrt{y}} =$

26. Solve the following equations:

a) $\sqrt{x+3} = x - 3$

b) $\sqrt{x+3} = \sqrt{x} - 3$