Name: _____ Class: _____ Date: _____ ID: A

Chapter 1 Test Retake Review

Simplify:

1. $\left(2c^6\right)^3$

2. $7^2 \cdot 7^3$

3. $d \cdot d^9 \cdot d^3$

4. $\left(-4m^8\right)\left(2m^6n^8\right)$

Simplify: Write your answer using positive exponents.

5. $a^4 \cdot a^{-11}$

6. $4^2 + 2 + 5^0$

Simplify the expression using positive exponents.

7. $\left(\frac{-3}{m}\right)^6$

8. Simplify $\frac{2^{12}}{2^{-3}}$

Simplify. Write your answer using positive exponents.

9. $(2qr^5)^3(qr)^6$

10. Evaluate the expression $\frac{5^4 \cdot 5^5}{5^6}$.

11. Rewrite using only positive exponents: $2a^3b^2c^{-2}$

12. Rewrite the expression using positive exponents.
$\frac{-3^0}{4x^{-3}}$

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Simplify:

13. $\dfrac{m^{\frac{5}{6}}}{m^{\frac{1}{6}}}$

14. $\dfrac{x^{\frac{2}{3}}}{x^{\frac{1}{6}}}$

15. $\left(5^{\frac{3}{4}}\right)^{\frac{-2}{9}}$

Simplify:

16. $x^{\frac{2}{3}} \cdot x^{\frac{1}{4}}$

17. $\left(\dfrac{f^{16}}{g^{12}}\right)^{3/4}$

Simplify:

18. $\dfrac{\sqrt{2}}{\sqrt{24}}$

19. $\dfrac{\sqrt{9} \cdot \sqrt{81}}{\sqrt{3}}$

Simplify:

20. $4\sqrt{2} + 3\sqrt{3} - 5\sqrt{3}$

Simplify the expression. Write your answer using only positive exponents.

21. $\left(x^{\frac{-2}{5}} y^{\frac{1}{2}}\right)^{10}$

22. $\sqrt{x^5 y^{24}}$

23. $\sqrt[7]{\dfrac{x^{14} y^{21}}{z^{-35}}}$

Simplify the expression. Assume all variables are positive.

24. $\sqrt[3]{36x^8 y^9 z^4}$

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25. $\sqrt{\dfrac{x^{10}}{y^{20}}}$

26. State whether the following are rational or irrational numbers.

A) $\sqrt{3} \cdot \sqrt{3}$
B) $\sqrt{3} \div \sqrt{3}$
C) $\sqrt{3} - \sqrt{3}$
D) $\sqrt{3} + \sqrt{3}$

27. Fill in each blank using the word: *all*, *some*, or *none*.
A) _____?_____ rational numbers are real numbers.
B) _____?_____ integers are rational numbers.
C) _____?_____ rational numbers are integers.
D) _____?_____ integers are irrational numbers.
E) _____?_____ real numbers are irrational numbers.
F) _____?_____ real numbers are either irrational numbers or rational numbers.

Simplify and show all work for full credit.

28. $\sqrt{\dfrac{45}{70}}$

29. $\sqrt{96}$

30. $\sqrt[3]{144}$

31: $-4\sqrt{40}$

32. Write each expression in exponential form.

$\sqrt{3b}$

33. Write each expression in exponential form.

$\left(\sqrt[3]{x}\right)^4$

34. Write each expression in radical form.

$4^{\frac{2}{3}}$

35. Write each expression in radical form.

$x^{\frac{5}{6}}$

36. Simplify: $2\sqrt{2}\left(3\sqrt{2} - 6\sqrt{5}\right)$

37. Simplify: $\sqrt{\sqrt[4]{3x}}$