Math II Honors

Chapter 1 Review

Name_____

Period_____Date_____

- Simplify the following.
- Leave exponents as positive.
- Simplify the radicals and rationalize the denominators.

1. $(-3x^4)^3$

2. $(4m)^{-2}$

3. $5^4 \cdot 5^3$

4. $x^2 \cdot x^{-3}$

5. $m^2 \cdot m^5 \cdot m$

6. $(-6m^3)(2m^4n^5)$

7. $6^2 + 7^0 - 3^2$

8. $\left(\frac{-2}{x}\right)^4$

9. $\left(\frac{3m^2}{n^4}\right)^3$

10. $\frac{6^4}{6^2}$

11. $(4u^2v^{10})^2(u^2v^3)^{-2}$

12. $\frac{m^4 \cdot m^3}{m^2}$

13. $\frac{-7^0}{6x^{-4}}$

14. $\frac{-8^0}{3x^4}$

15. $\frac{m^{\frac{2}{3}}}{m^{\frac{1}{3}}}$

16. $\frac{x^{\frac{4}{7}}}{x^{\frac{2}{21}}}$

17. $\left(2^{\frac{3}{5}}\right)^{\frac{-10}{9}}$

18. $\left(3^{\frac{1}{3}}\right)^{\frac{3}{2}}$

19. $x^{\frac{3}{5}} \cdot x^{\frac{1}{2}}$

20. $\left(\frac{m^{10}}{n^5}\right)^{\frac{3}{5}}$

21. $\frac{\sqrt{5}}{\sqrt{15}}$

22. $\frac{\sqrt[3]{6}}{\sqrt[3]{12}}$

23. $\frac{\sqrt[4]{9} \cdot \sqrt[4]{16}}{\sqrt[4]{3}}$

24. $3\sqrt{5} - 2\sqrt{7} + 6\sqrt{5}$

25. $2\sqrt{5} + 6\sqrt{3} - 8\sqrt{5}$

26. $4\sqrt{2}\left(-6\sqrt{10}+5\sqrt{2}\right)$

27. $3\sqrt{7}\left(4\sqrt{2}-5\sqrt{3}\right)$

28. $\left(x^{\frac{-2}{3}}y^{\frac{1}{3}}\right)^{6}$

29. $\sqrt{x^{2}y^{15}}$

30. $\sqrt[6]{\frac{x^{36}y^{42}}{z^{-12}}}$

31. $\sqrt[3]{24x^{10}y^{3}z^{8}}$

32. $\sqrt{\frac{m^{30}}{n^{40}}}$

33. $\sqrt{\frac{144}{16}}$

34. $\sqrt{80}$

35. $\sqrt[3]{128}$

36. $-3\sqrt{48}$

Write in exponential form.

37. $\sqrt{4b}$

38. $\left(\sqrt[3]{3m}\right)^{5}$

Write in radical form.

39. $25^{\frac{3}{2}}$

40. $(4m)^{\frac{3}{5}}$

Simplify.

41. $\sqrt[6]{\sqrt[4]{2x}}$

42. $\left(\sqrt{\sqrt[3]{m}}\right)^{2}$

43. $\sqrt{2x}\cdot\sqrt[3]{2x}$

44. State whether the statements are true or false.

a) All rational numbers are integers.

b) You can write all real numbers in the form p/q where p and q are integers.

c) Some irrational numbers are integers.

d) All integers are rational numbers.

45. Indentify each number as rational or irrational.

a) 13/2

b) -19.13

c) $\sqrt{17}$

d) $\sqrt{121}$

e) π

f) $\sqrt{5}+\sqrt{5}$

g) $\sqrt{5}-\sqrt{5}$

h) $\sqrt{5}\div\sqrt{5}$