

2.3H Math is Rad

Name: _____ Per: _____

SHOW YOUR WORK IN PENCIL ONLY. NO WORK, NO CREDIT.

Evaluate the following expressions (plug in the numbers) if $a = 4$, $b = -2$, and $c = 8$.

1. $3(a^2 + b) - ac$

2. $\frac{a}{b} + c^2(a + b)$

3. $\frac{a}{b} + c^2(a - b)$

4. Use the value of 3 and -3 to illustrate the similarities and differences between the three expressions:

$-a^2$

$(-a)^2$

a^2

Find the **smallest Integer radicand** (if possible). Give in exact **REAL** answers. No decimal answer

5. $\sqrt{81 * 2}$

10. $\sqrt{25} + 3\sqrt{9}$

15. $\sqrt{99} * \sqrt{16}$

6. $4\sqrt{50 * 2}$

11. $\sqrt{8} + 2\sqrt{2} + 2$

16. $3\sqrt{63}$

7. $\sqrt{100} - \sqrt{24}$

12. $\sqrt{49} * \sqrt{25}$

17. $\sqrt{8} + \sqrt[3]{8}$

8. $\sqrt{75} + \sqrt{25}$

13. $\sqrt{64} * -3\sqrt{4}$

18. $\sqrt[3]{16} + \sqrt[3]{64}$

9. $\sqrt{-25}$

14. $\sqrt{40} + \sqrt{12}$

19. $\sqrt[3]{125} * \sqrt{72}$

Solve each equation and write with the smallest integer radicand. **CHECK** your answers. No decimals.

20. $2y^2 = \frac{2}{3}(12 + y^2)$

25. $3x^2 + 2 = 8 - 2(x^2 - 6)$

23. $5(x^2 + 4) = 5 + 6x^2$

21. $2(y^2 + 1) = 10$

24. $2(x^2 + 2) = 8 - 2x^2$

22. $3y^2 - y - 12 = -y + 12$

26. Joey is solving $4(3m^2 - 1) \geq -2(m^2 - 3)$ for m . **Explain** the steps he should take **using** the properties.

Solve each equation.

27. $4\sqrt{a} = 20$

31. $\sqrt{x-2} + 5 = 6$

28. $2\sqrt{\frac{h}{4}} = 6$

32. $10 + 4\sqrt{\frac{v}{3}} = 42$

29. $10 = \sqrt{p-10}$

33. $-7\sqrt{2a+9} = -35$

30. $2 = -4 + \sqrt{a}$

34. $5\sqrt{2p+25} = 2$

Solve the following formulas for **r**.

35. $V = \pi r^2 h$

36. $V = \pi r^2 \frac{h}{3}$

37. $V = \frac{4}{3}\pi r^3$

Solve each proportion. **EXPLAIN** your reasoning. (Do not just say, "I cross multiplied.")

38. $\frac{b+9}{10} = \frac{2}{8}$

40. $\frac{7n-1}{4} = \frac{3}{10}$

42. $\frac{3c}{8} = \frac{3}{2c}$

39. $\frac{7}{3} = \frac{4}{x-3}$

41. $\frac{10}{4} = \frac{2}{(3n+8)}$

43. $\frac{b-8}{5} < \frac{b+3}{4}$