

7-3 Skills Practice

Rational Exponents

Write each expression in radical form, or write each radical in exponential form.

1. $(8x)^{\frac{1}{2}}$

$$\sqrt{8x}$$

2. $6z^{\frac{1}{2}}$

$$6\sqrt{z}$$

3. $\sqrt{19}$

$$19^{\frac{1}{2}}$$

4. $\sqrt{11}$

$$11^{\frac{1}{2}}$$

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

$$19\sqrt{x}$$

6. $\sqrt{34}$

$$34^{\frac{1}{2}}$$

7. $\sqrt{27g}$

$$(27g)^{\frac{1}{2}}$$

8. $33gh^{\frac{1}{2}}$

$$33g\sqrt{h}$$

9. $\sqrt{13abc}$

$$(13abc)^{\frac{1}{2}}$$

Simplify.

10. $\left(\frac{1}{16}\right)^{\frac{1}{4}} = \frac{1}{2}$

11. $\sqrt[5]{3125} = 5$

12. $729^{\frac{1}{3}} = 9$

13. $(\frac{1}{29})^{\frac{1}{5}}$ 32 14

$\frac{1}{2}$ 8 .4

2 2 2 2

If $a = b$, Must be the same!
 then $n \cdot x^a = x^b$
 (and vice versa)

Lesson 7-3

Solve each equation.

19. $2^x = 512$

$2^x = 2^9 \Rightarrow x = 9$

20. $3^x = 6561$

$3^x = 3^8$

$x = 8$

21. $6^x = 46,656$

22. $5^x = 125$

23. $3^{x-3} = 243$

24. $4^{x-1} = 1024$

25. $6^{x-1} = 1296$

$6^{x-1} = 6^4$
 $x-1 = 4$
 $x = 5$

26. $2^{4x+3} = 2048$

27. $3^{3x+3} = 6561$

$3^{3x+3} = 3^8$
 $3x+3 = 8$
 $3x = 5$
 $x = \frac{5}{3}$