

Algebra 1
6.2 Homework

Name: Key
Date: _____ Hour: _____

Rewrite the expression in rational exponent form.

1. $\sqrt{10}$

$10^{\frac{1}{2}}$

2. $\sqrt[5]{34}$

$34^{\frac{1}{5}}$

Rewrite the expression in radical form.

3. $15^{1/3}$

$\sqrt[3]{15}$

4. $140^{1/8}$

$\sqrt[8]{140}$

Find the indicated real n th root(s) of a .

5. $n = 2, a = 36$

± 6

6. $n = 4, a = 81$

± 3

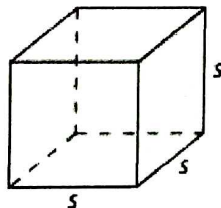
7. $n = 9, a = -512$

-2

Find the dimensions of the cube. Check your answer.

8.

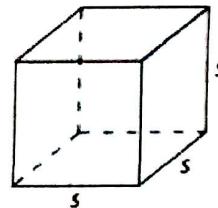
Volume = 64 in.^3



$s = 4 \text{ in.}$

9.

Volume = 216 cm^3



$s = 6 \text{ cm.}$

Evaluate the expression.

10. $\sqrt[4]{256}$

4

11. $\sqrt[3]{-216}$

-6

12. $\sqrt[3]{-343}$

-7

13. $-\sqrt[5]{1024}$

-4

14. $128^{1/7}$

2

15. $(-64)^{1/2}$

not a real number

Rewrite the expression in rational exponent form.

16. $(\sqrt[5]{8})^4$

$8^{\frac{4}{5}}$

17. $(\sqrt[5]{-21})^6$

$(-21)^{\frac{6}{5}}$

Rewrite the expression in radical form.

18. $(-4)^{2/7}$

$(\sqrt[7]{-4})^2$

19. $9^{5/2}$

$(\sqrt{9})^5$

Evaluate the expression.

20. $32^{3/5}$

8

21. $125^{2/3}$

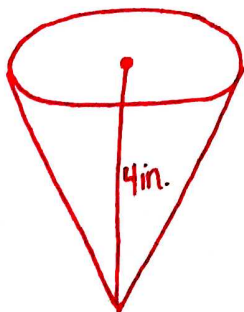
25

22. $(-36)^{3/2}$

Not a real number

Modeling with Mathematics:

The radius r of the base of a cone is given by the equation $r = \left(\frac{3V}{\pi h}\right)^{1/2}$ where V is the volume of the cone and h is the height of the cone. Find the radius of the paper cup to the nearest inch. Use 3.14 for π .



Volume = 5 in^3

$r \approx 1 \text{ in.}$