

Name

Date

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period —

Rational Exponents  
and Radicals.

$$1) \sqrt{36} = \sqrt{6 \cdot 6} = \boxed{6}$$

$$2) \sqrt{100} = \sqrt{10 \cdot 10} = \boxed{10}$$

$$3) \sqrt[3]{64} = \textcircled{4}$$

$$4) \sqrt[3]{125} = \textcircled{5}$$

$$5) \sqrt[3]{1} = \boxed{1}$$

$$6) \sqrt[4]{256} = \textcircled{4}$$

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$$7) \sqrt[3]{32} = 3.174$$

$$8) \sqrt[5]{1} = 1$$

$$9) \sqrt[3]{729} = 9$$

$$10) \sqrt[4]{256} = 4$$

$$11) \sqrt[7]{1} = 1$$

$$12) \sqrt[3]{243} = 6.246$$

$$13) \sqrt{289} = 17$$

$$14) \sqrt{625} = 25$$

$$15) \sqrt{49} = 7$$

16)

Write each expression in radical form

16)  $x^{\frac{1}{2}}$   $\sqrt{x^1}$

17)  $(25x^2)^{\frac{1}{2}}$   
 $25^{\frac{1}{2}} x^1$

$\sqrt{25}$   
 $(5x)$

18)  $x^{\frac{2}{3}}$

$\sqrt[3]{x^2}$

19)  $15x^{\frac{3}{4}}$

$15 \sqrt[4]{x^3}$

20)  $16t^{\frac{1}{5}}$

$16 \sqrt[5]{t^1}$

21)  $b^{\frac{2}{3}}$

$\sqrt[3]{b^2}$

22)  $y^{\frac{1}{4}}$

$\sqrt[4]{y^1}$

23)  $z^{\frac{5}{3}}$

$\sqrt[3]{z^5}$

24)  $p^{\frac{1}{4}}$

$\sqrt[4]{p^1}$

notes:

- 1)  $1^2$   $1 \times 1 = 1$   $\sqrt{1} = 1$
- 2)  $2^2$   $2 \times 2 = 4$   $\sqrt{4} = 2$
- 3)  $3^2$   $3 \times 3 = 9$   $\sqrt{9} = 3$
- 4)  $4^2$   $4 \times 4 = 16$   $\sqrt{16} = 4$
- 5)  $5^2$   $5 \times 5 = 25$   $\sqrt{25} = 5$
- 6)  $6^2$   $6 \times 6 = 36$   $\sqrt{36} = 6$
- 7)  $7^2$   $7 \times 7 = 49$   $\sqrt{49} = 7$
- 8)  $8^2$   $8 \times 8 = 64$   $\sqrt{64} = 8$
- 9)  $9^2$   $9 \times 9 = 81$   $\sqrt{81} = 9$
- 10)  $10^2$   $10 \times 10 = 100$   $\sqrt{100} = 10$
- 11)  $11^2$   $11 \times 11 = 121$   $\sqrt{121} = 11$
- 12)  $12^2$   $12 \times 12 = 144$   $\sqrt{144} = 12$
- 13)  $13^2$   $13 \times 13 = 169$   $\sqrt{169} = 13$
- 14)  $14^2$   $14 \times 14 = 196$   $\sqrt{196} = 14$
- 15)  $15^2$   $15 \times 15 = 225$   $\sqrt{225} = 15$
- 16)  $16^2$   $16 \times 16 = 256$   $\sqrt{256} = 16$
- 17)  $17^2$   $17 \times 17 = 289$   $\sqrt{289} = 17$
- 18)  $18^2$   $18 \times 18 = 324$   $\sqrt{324} = 18$
- 19)  $19^2$   $19 \times 19 = 361$   $\sqrt{361} = 19$
- 20)  $20^2$   $20 \times 20 = 400$   $\sqrt{400} = 20$

$$21) 21^2 \quad 21 \times 21 = 441 \quad \sqrt{441} = 21$$

$$22) 22^2 \quad 22 \times 22 = 484 \quad \sqrt{484} = 22$$

$$23) 23^2 \quad 23 \times 23 = 529 \quad \sqrt{529} = 23$$

$$24) 24^2 \quad 24 \times 24 = 576 \quad \sqrt{576} = 24$$

$$25) 25^2 \quad 25 \times 25 = 625 \quad \sqrt{625} = \textcircled{25}$$