

Form 10 - Chapter 4 PRACTICE Test - Calculator Permitted

20 Multiple Choice: Choose the BEST answer. Record your answer on the line.

d 1. Identify the index of $\sqrt[3]{10^4}$.

- a. 10^4 b. 10 c. 4 d. 3

C 2. Evaluate $\sqrt[3]{0.512}$. *use calc ... $\sqrt[3]{}$ button ... 0.8*

- a. 0.64 b. $0.170\bar{6}$ c. 0.8 d. 0.008

C 3. Evaluate $\sqrt{\frac{256}{625}}$. *= $\frac{\sqrt[4]{256}}{\sqrt[4]{625}}$ use \sqrt{x} button for both ... make index 4!*
= $\frac{4}{5}$

- a. $\frac{16}{5}$ b. $\frac{16}{25}$ c. $\frac{4}{5}$ d. $\frac{4}{25}$

a 4. Which of these numbers is rational?

$\sqrt{\frac{121}{49}}$, $\sqrt{24}$, $\sqrt[3]{25}$, $\sqrt{0.121}$

$\sqrt{\frac{121}{49}} = \frac{\sqrt{121}}{\sqrt{49}} = \frac{11}{7}$

- a. $\sqrt{\frac{121}{49}}$ b. $\sqrt{0.121}$ c. $\sqrt{24}$ d. $\sqrt[3]{25}$

a 5. To which set(s) of numbers does $-\sqrt{16}$ belong?

I	Natural
<u>II</u>	Integer
<u>III</u>	Rational
IV	Irrational

$-\sqrt{16} = -4$
 - not natural
 - integer
 - rational
 - not irrational

- a. II and III only b. IV only c. III only d. I, II and III only

Name: _____

ID: P

b

6. Write $5^4\sqrt{3}$ as an entire radical.

$$5^4\sqrt{3} = \sqrt[4]{5^4 \cdot 3} = \sqrt[4]{625 \cdot 3} = \sqrt[4]{1875}$$

a. $\sqrt[4]{75}$

b. $\sqrt[4]{1875}$

c. $\sqrt[4]{405}$

d. $\sqrt[4]{225}$

C

7. Write $\sqrt{112}$ in simplest form.

$$\sqrt{112} = \sqrt{16 \times 7} = \sqrt{16} \times \sqrt{7} = 4\sqrt{7}$$

a. $7\sqrt{4}$

b. $16\sqrt{7}$

c. $4\sqrt{7}$

d. $4\sqrt{28}$

C

8. Write $\sqrt{175}$ in simplest form.

$$\sqrt{175} = \sqrt{25 \cdot 7} = 5\sqrt{7}$$

a. $7\sqrt{5}$

b. $25\sqrt{7}$

c. $5\sqrt{7}$

d. $5\sqrt{35}$

C

9. Order these numbers from greatest to least: $2\sqrt{30}, 3\sqrt{3}, 2\sqrt{7}, 5\sqrt{5}, 2\sqrt{13}$

$$= \sqrt{4 \cdot 30}, \sqrt{9 \cdot 3}, \sqrt{4 \cdot 7}, \sqrt{25 \cdot 5}, \sqrt{4 \cdot 13}$$

$$= \sqrt{120}, \sqrt{27}, \sqrt{28}, \sqrt{125}, \sqrt{52}$$

$5\sqrt{5}, 2\sqrt{30}, 2\sqrt{13}, 2\sqrt{7}, 3\sqrt{3}$

a. $2\sqrt{13}, 2\sqrt{7}, 3\sqrt{3}, 5\sqrt{5}, 2\sqrt{30}$

b. $5\sqrt{5}, 2\sqrt{30}, 3\sqrt{3}, 2\sqrt{13}, 2\sqrt{7}$

c. $5\sqrt{5}, 2\sqrt{30}, 2\sqrt{13}, 2\sqrt{7}, 3\sqrt{3}$

d. $3\sqrt{3}, 5\sqrt{5}, 2\sqrt{30}, 2\sqrt{13}, 2\sqrt{7}$

a

10. Write $x^{\frac{5}{4}}$ as a radical.

$$\left(\sqrt[4]{x}\right)^5$$

a. $\left(\sqrt[4]{x}\right)^5$

b. $\sqrt[5]{x^4}$

c. $\left(\sqrt[5]{x}\right)^4$

d. $\sqrt[125]{x}$

d

11. Write $\sqrt{\left(\frac{3}{2}\right)^7}$ as a power.

$$\left(\frac{3}{2}\right)^{\frac{7}{2}}$$

a. $\left(\frac{3}{2}\right)^{\frac{7}{2}}$

b. $\left(\frac{3}{2}\right)^{\frac{2}{7}}$

c. $\left(\frac{2}{3}\right)^{\frac{2}{7}}$

d. $\left(\frac{3}{2}\right)^{\frac{7}{2}}$

Name: _____

$$V_{\text{cube}} = e^3$$

$$760 = e^3$$

flower power!

ID: P

$$e = \sqrt[3]{760}$$

$$e = 760^{\frac{1}{3}}$$

a 12. A cube has volume 760 cubic inches. Write the edge length of the cube as a power (exponent form!).

a $760^{\frac{1}{3}}$ in.

b. 760^3 in.

c. 760^{-3} in.

d. $\sqrt[3]{760}$ in.

b 13. Evaluate 8^{-3} = $\frac{1}{8^3} = \frac{1}{512}$

a. -512

b. $\frac{1}{512}$

c. $2\sqrt{2}$

d. $\frac{1}{24}$

a 14. Evaluate $(-27)^{\frac{1}{3}}$ = $(-27)^{\frac{1}{3}} = \sqrt[3]{-27} = -3 = -\frac{1}{3}$

a $-\frac{1}{3}$

b. $\frac{1}{9}$

c. $\frac{1}{9}$

d. $\frac{1}{3}$

a 15. Which power with a negative exponent is equivalent to $\frac{1}{125} = \frac{1}{5^3} = 5^{-3}$

a 5^{-3}

b. -5^{-3}

c. 3^{-5}

d. $(-5)^3$

d 16. Simplify $\frac{21p^7q^{-5}}{35pq^4}$ Write using powers with positive exponents.

$$= \frac{3p^7}{5p^1q^4q^5} = \frac{3p^6}{5q^9}$$

a. $\frac{p^6}{14q^9}$

b. $\frac{3p^7}{5q^9}$

c. $\frac{3p^6}{5q}$

d $\frac{3p^6}{5q^9}$

Over ↪

C 17. Simplify $\left(4s^{\frac{1}{4}}t^{\frac{2}{3}}\right)\left(-3s^{\frac{5}{4}}t^{\frac{10}{3}}\right) = (4)(-3) \cdot s^{\frac{1}{4}} \cdot s^{\frac{5}{4}} \cdot t^{-\frac{2}{3}} \cdot t^{\frac{10}{3}}$
 $= -12s^{-\frac{4}{4}}t^{\frac{8}{3}} = -12s^{-1}t^{\frac{8}{3}} = \boxed{-\frac{12t^{\frac{8}{3}}}{s}}$

a. $-12st^{\frac{8}{3}}$ b. $\frac{12}{st^4}$ c. $\frac{12t^{\frac{8}{3}}}{s}$ d. $\frac{t^{\frac{8}{3}}}{12s}$

a 18. Simplify $\left(\frac{36x^2y^5}{4x^{10}y^{-3}}\right)^{\frac{1}{2}} = \left(\frac{9x^{\cancel{2}y^{\cancel{5}3}}{x^{\cancel{10}8}}\right)^{\frac{1}{2}} = \left(\frac{9x^{\cancel{2}y^{\cancel{8}}}}{x^{\cancel{8}8}}\right)^{\frac{1}{2}} = \frac{9^{\frac{1}{2}}(y^{\cancel{8}})^{\frac{1}{2}}}{(x^{\cancel{8}8})^{\frac{1}{2}}} = \frac{3y^4}{x^4}$

a. $\frac{3y^4}{x^4}$ b. $3x^4y^4$ c. $\frac{3y}{x^4}$ d. $\frac{3y^4}{x^6}$

a 19. Evaluate $\left(-\frac{2}{5}\right)^{\frac{5}{4}} \cdot \left(-\frac{2}{5}\right)^{\frac{3}{4}} = \left(-\frac{2}{5}\right)^{\frac{5}{4} + \frac{3}{4}} = \left(-\frac{2}{5}\right)^{\frac{8}{4}} = \left(-\frac{2}{5}\right)^2 = \frac{(-2)^2}{(5)^2} = \frac{4}{25}$

a. $\frac{4}{25}$ b. $\frac{25}{4}$ c. $\frac{2}{5}$ d. $\frac{4}{25}$

d 20. Evaluate $(a^{-7}b^{-2})(a^6b^{-3})$ for $a = -1$ and $b = 2$.
 $= a^{-7} \cdot a^6 \cdot b^{-2} \cdot b^{-3}$
 $= a^{-1}b^{-5} = \frac{1}{a^1b^5}$ now... $a = -1, b = 2$, so... $\frac{1}{(-1)(2)^5} = \frac{1}{(-1)(32)} = \boxed{-\frac{1}{32}}$

a. -32 b. $\frac{1}{32}$ c. 64 d. $-\frac{1}{32}$