

Math 9 Enriched
Ch 2 Practice Test

Name _____

Date _____

- $(\sqrt{81})^2 = \underline{\hspace{2cm}}$
- Write $5\sqrt{2}$ as a complete radical.
- Which whole number is closest to $\sqrt[3]{75}$?
a) 4 b) 5 c) 7 d) 8 e) 9
- $\sqrt{6^2 \times 2^2 \times 7^2} =$
- If $\sqrt[A]{X^B} = 11^{4/5}$ then what is the value of X ?
a) $\frac{4}{5}$ b) $\frac{5}{4}$ c) 4 d) 5 e) 11
- Write $7^{5/9}$ in radical form.
- Simplify: $(7 + \sqrt{5})(7 - \sqrt{5})$
- Simplify: $(3\sqrt{5} + \sqrt{3})^2$
- Simplify: $\frac{2 + 4\sqrt{7}}{2}$
- Rationalize the denominator: $\frac{\sqrt{5} - \sqrt{7}}{\sqrt{7} + \sqrt{5}}$
- When the denominator of $\frac{4 + \sqrt{7}}{8 + \sqrt{7}}$ is rationalized and reduced, the expression can be written in the form $\frac{A + B\sqrt{C}}{D}$. What is the value of D ?
- The diameter of a wire when a heavy object is suspended satisfies the following relationship:
$$d = 2\sqrt{\frac{w\ell}{\pi ES}}$$
where S is the amount of stretch, w is the weight of the object, ℓ is the original length of the wire, and E is the coefficient that is specific to the type of metal.
Solve the equation for S .
- Find the value of C : $\frac{8^8 \times 15^3}{6^4 \times 30^8} = \frac{2^A}{3^B \times 5^C}$

14. Simplify: $\sqrt{3\sqrt{3\sqrt{3}}}$
15. $3^7 - 3^6 = N \cdot 3^6$. Find N .
16. The midpoints of the adjacent sides of a square are connected to form a new square. What is the number of inches in the perimeter of the new square if the perimeter of the original square is 16 inches? Express your answer in simplest radical form.
17. The ratio of the length of a rectangle to its width is the same as that of the diagonal to the length. If the width is 2, how many units are in the length of the diagonal?
18. Simplify: $\left(\frac{\sqrt{36} + \sqrt{64}}{\sqrt{36} + 64}\right)^2$

Express as a decimal.

19. What is the positive value of x , correct to the nearest hundredth, such that $x^8 = 35.72$?
20. Which of the following is the greatest?
- a) $\left(\frac{1}{8}\right)^{-3}$
- b) $((-2)^2)^3$
- c) $\left(-\frac{1}{2}\right)^{-2} (-2)^{-3}$

21. What is the result when $\frac{\sqrt[7]{x^3}}{\sqrt[4]{x^3}}$ is simplified?

22. If p and q are positive numbers, which of the following is *not* always true?

- a) $\frac{1}{\sqrt{p}} = \frac{q}{\sqrt{pq^2}}$
- b) $\sqrt{(p+q)^2} = p+q$
- c) $(\sqrt{p})^q = \sqrt{p^q}$
- d) $\sqrt{p+q} = \sqrt{p} + \sqrt{q}$
- e) $\sqrt{p}\sqrt{q} = \sqrt{pq}$

23. Three metal disks with radii of 10 cm are tangent to each other. The disks are enclosed by an equilateral triangle metal frame. What is the length of one side of the frame?

