

Extra Practice: Prime Factors, Applications, Rational/Irrational, Number Systems & Radicals

Math 10 · Mr. Merrick

Prime Factors

- State *all* positive divisors of the following.
 - 84
 - 75
 - 96
 - 105
- In each case, determine the *number* of factors of the given whole number.
 - 96
 - 131
 - 225
 - 256
 - 374
- From the list in Question 2, state which numbers are prime and which are composite.
- Classify each whole number as prime or composite.
(a) 47 (b) 91 (c) 101 (d) 143 (e) 221 (f) 257
- Twin primes are consecutive odd primes (e.g. 5, 7). List seven other twin-prime pairs < 120 .
- State the factors of 48.
 - State the *prime* factors of 48.
 - Express 72 as a product of prime factors.
- State the *prime factors* of:
 - 18
 - 40
 - 63
 - 90
- Explain why the numbers 0 and 1 have no prime factors.
- Use a *division table* to determine the prime factorization of:
 - 252
 - 378
 - 2025
 - 2926
- Use a *factor tree* to determine the prime factorization of:
 - 784
 - 960
 - 4725
 - 8400
- In each case, write the number as a product of prime factors.
 - 3315
 - 8085
 - 9990
 - 7980
- Which of the following numbers is *not* a prime factor of 2079?
A. 3 B. 7 C. 11 D. 13
- How many numbers in the list 2, 3, 9, 13 are *not* prime factors of 2592?
- The sum of all *distinct* prime factors of 462 462 is _____.
- There is only one set of *prime triplets* (three consecutive odd primes). If the triplets are a, b, c , find abc .
- The number 375 can be expressed as $p \times q^r$ in primes. Find $p + q + r$.

Applications of Prime Factors

- State the greatest common factor (GCF) of:
 - 18 and 27
 - 32 and 56
 - 36, 48, 90
- Use prime factorization to determine the GCF of:
 - 180 and 420
 - 294 and 385
 - 252 and 756
- Use prime factorization to determine the GCF of each pair.
 - 528 and 780
 - 616 and 840
 - 1870 and 2210
 - 714 and 1050
 - 128 and 320
 - 735 and 980
- Determine the GCF of:
 - 84, 420, 1008
 - 128, 984, 1496, 3080
- State the lowest common multiple (LCM) of:
 - 8 and 12
 - 7 and 9
 - 12 and 20
 - 15 and 18
- Use prime factorization to determine the LCM of:
 - 18 and 24
 - 45 and 84
 - 96 and 144
 - 55 and 143
 - 72 and 252
- Determine the LCM of:
 - 8, 12, 18
 - 6, 14, 35
 - 9, 10, 25
 - 12, 30, 105
- In each case, decide whether the number is a perfect square (give the root if so).
 - 9801
 - 7776
 - 4900
 - 1089
- Consider 103 823.
 - Evaluate $\sqrt[3]{103\,823}$.
 - Explain why 103 823 is a perfect cube.
- Use prime factorization to test for perfect cubes (give the cube root if so).
 - 2744
 - 110 592
 - 35 937
 - 421 875
- Explain how to tell if a number is *both* a perfect square and cube.
- The greatest common factor of 425 and 595 is **A. 5 B. 7 C. 17 D. 85**
- Two whole numbers x, y have $\gcd(x, y) = 14$. Which statement must be false?
A. x, y both even **B.** xy divisible by 98
C. x, y both multiples of 7 **D.** Neither x nor y can be prime
- The LCM of 36, 231, 275 is _____.
- An encyclopedia has 840 pages. Page 12 and every 12th page is green; page 21 and every 21st is orange. How many pages are both?

Rational and Irrational Numbers

- For each, state repeating/non-repeating and terminating/non-terminating.
 - $\frac{7}{20}$
 - $0.742742742\dots$
 - $\frac{19}{22}$
 - $\sqrt{\frac{196}{400}}$
 - $-\sqrt{31}$
 - $\sqrt{0.36}$
 - $-4\frac{5}{11}$
 - π
- True/False.
 - Every terminating decimal is rational.
 - A repeating decimal cannot be written as a fraction.
 - Only terminating decimals are rational.
 - Every rational decimal is either terminating or repeating.
 - A decimal cannot be both repeating and non-repeating.
 - π is irrational.
- Rational or irrational? Briefly justify.
 - $-\frac{17}{8}$
 - 0.605
 - $\sqrt{196}$
 - $0.305305305\dots$
- Order on a number line:
 $\sqrt{14}$, $\sqrt{\pi}$, $\sqrt{0.2}$, $\sqrt{98}$, $2\sqrt{11}$, $3\sqrt{5}$.
- Identify as rational or irrational; if rational, simplest fraction.
 - 0.92
 - $\sqrt{\frac{9}{121}}$
 - $\sqrt{0.0121}$
 - $-\sqrt{97}$
 - $-0.\bar{8}$
 - $-\sqrt{\frac{49}{81}}$
 - $4.612612\dots$
 - $\sqrt{\frac{361}{529}}$
 - $5.\bar{0}$
- Convert to improper fraction (simplest form).
 - $0.\bar{7}$
 - $0.1\bar{6}$
 - $1.2\bar{3}$
 - $0.\overline{204}$
 - $-2.45\overline{45}$
- Convert the repeating decimal to a fraction (algebraic method).
 - $0.\bar{3}$
 - $0.7\bar{2}$
 - $0.009\overline{81}$
- Convert each terminating decimal to an improper fraction (lowest terms).
 - 3.007
 - -2.125
 - 4.0625
- The decimal for $\frac{7}{12}$ is
 - terminating & repeating
 - terminating & non-repeating
 - non-terminating & repeating
 - non-terminating & non-repeating
- Which is irrational?

A. $\sqrt{256}$ **B.** $\sqrt{0.09}$ **C.** $\frac{25}{6}$ **D.** $\sqrt{50}$
- $9.\bar{9}$ is equal to

A. $\frac{99}{10}$ **B.** $\frac{999}{100}$ **C.** 10 **D.** 9
- Write $0.\overline{27} = \frac{a}{b}$ in lowest terms and compute $b - a$.

Number Systems

- Place each into the appropriate nested sets ($N \subset W \subset \mathbb{Z} \subset \mathbb{Q} \subset \mathbb{R}$ and $\mathbb{R} \setminus \mathbb{Q}$):
 $-3, \sqrt{81}, \frac{29}{11}, \sqrt{2}, 0, \pi$.
- List all sets (largest \rightarrow smallest) each belongs to.
 - -8
 - $\sqrt{64}$
 - $3.2727\dots$
 - $-\frac{12}{7}$
 - 0
 - $\sqrt{11}$
 - non-repeating $-2.1345218\dots$
 - π
- Why does -7 belong to more sets than $-\frac{7}{2}$?
- Indicate membership in $N, W, \mathbb{Z}, \mathbb{Q}, \overline{\mathbb{Q}}$ (irrationals), and \mathbb{R} for each.
 - $\frac{1}{5}$
 - 123987
 - -4
 - 7.534
 - 9.5
 - $\sqrt{75}$
 - $-\pi$
 - $-\frac{355}{113}$
 - $-\sqrt{49}$
 - 0.000005
 - non-repeating $2.232425\dots$
- Find a number that satisfies each condition.
 - Integer but not whole.
 - Rational but not integer.
 - Real but not rational.
 - Whole but not natural.
- Fill with *always/sometimes/never*.
 - A whole number is _____ a natural number.
 - The quotient of two integers is _____ an integer.
 - A whole number is _____ a rational number.
 - The difference between two integers is _____ an integer.
 - The square root of a number is _____ irrational.
 - A negative number is _____ in W .
 - A number in N is _____ in \mathbb{R} .
- True/False.
 - All natural numbers are integers.
 - Real numbers consist of rationals and irrationals.
 - Integers are nested within rationals.
 - All integers are rational.
 - All irrationals are real.
 - \mathbb{R} is contained in N .
 - \mathbb{Q} is contained in W .
 - Exactly one element of W is not in N .
- More about roots (True/False).
 - Every positive number has two square roots but one cube root.
 - Every negative number has one real cube root but no real square roots.
- Short explanations (estimation).
 - $\sqrt{8} + \sqrt{17} \neq \sqrt{25}$
 - $\sqrt{2} + \sqrt{3} + \sqrt{4} \neq \sqrt{9}$
- Determine true or false.
 - $\sqrt{9} + \sqrt{4} = \sqrt{9+4}$.
 - $\sqrt{9} - \sqrt{4} = \sqrt{9-4}$.
 - $\sqrt{9} \cdot \sqrt{4} = \sqrt{36}$.
 - $\sqrt{9} + \sqrt{4} = \sqrt{9} + 4$.

11. For each, (i) estimate mentally; (ii) use a calculator (nearest tenth) and judge the estimate.
- $\sqrt{21}$
 - $\sqrt{27.4}$
 - $4\sqrt{48} - 3\sqrt{63}$
 - $\frac{3}{4}\sqrt{14.2} + \frac{1}{2}\sqrt{5}$
 - $\sqrt{123}$
 - $\sqrt{\sqrt{90}}$
 - $\sqrt{10} + \sqrt{24.5}$
 - $\sqrt{\sqrt{2601}}$
12. Estimate to one significant digit.
- $\sqrt{507.1}$
 - $\sqrt{7991}$
 - $\sqrt{10\,389}$
 - $\sqrt{823\,775}$
 - $\sqrt{0.501}$
 - $\sqrt{0.0501}$
 - $\sqrt{0.0876}$
 - $\sqrt{0.000\,397\,2}$
13. (i) estimate; (ii) calculator (nearest tenth).
- $\sqrt[3]{25}$
 - $\sqrt[3]{2}$
 - $\sqrt[3]{202}$
 - $\sqrt[3]{999.9}$
 - $2\sqrt[3]{58.7} - 3\sqrt[3]{7.62}$
 - $\frac{2}{3}\sqrt{40} - \frac{1}{2}\sqrt{60}$
 - $\sqrt[3]{3\sqrt{10}}$
14. Order on the number line:
 $\sqrt{50}$, $\sqrt[3]{50}$, $5\sqrt{10}$, $\sqrt[3]{10^3}$, $10\sqrt{5}$, $10\sqrt[3]{5}$.
15. Which nesting statement is *false*?
- Integers \subset rationals
 - Wholes \subset naturals
 - Irrationals \subset reals
 - Reals \subset naturals
16. How many of $-\sqrt{6}$, $\sqrt[3]{-6}$, $-\sqrt[3]{6}$, $\sqrt{-6}$ are not real?
17. How many of $\sqrt{49}$, $\sqrt{49/100}$, $\sqrt{0.49}$, $\sqrt{\frac{4}{9}}$ can be written as $\frac{a}{b}$ with $a, b \in \mathbb{N}$?
18. To the nearest hundredth, evaluate $5\sqrt[3]{7}$.
19. Evaluate the absolute values.
- $|-4|$
 - $|13|$
 - $|3 - 9|$
 - $||3| - |9||$
 - $|\sqrt[3]{27}|$
 - $|\sqrt[3]{-27}|$
20. Decide whether the statement is true or false.
- $|x| = x$ if $x > 0$.
 - $|x| = -x$ if $x < 0$.
21. Sketch solution sets on a number line.
- $|x| < 5$
 - $|a| \geq 3$

Radicals

- Mentally evaluate where possible (real numbers).
 - $\sqrt{81}$
 - $\sqrt[4]{81}$
 - $5\sqrt[3]{27}$
 - $\sqrt[5]{100\,000}$
 - $\sqrt{\frac{16}{25}}$
 - $\sqrt[4]{\frac{1}{16}}$
 - $4\sqrt[4]{\frac{1}{16}}$
 - $-\sqrt{1}$
 - $\sqrt{-1}$
 - $\sqrt[5]{-1}$
 - $7\sqrt[3]{-125}$
 - $-\sqrt[4]{\frac{1}{16}}$
 - $3\sqrt{144}$
 - $\frac{5}{2}\sqrt[5]{32}$
 - $-\sqrt[11]{-1}$
 - $\sqrt[3]{\frac{8}{27}}$
- True/False.
 - The square roots of 25 are ± 5 .
 - $\sqrt{25} = \pm 5$.
 - If $x^2 = 25$ and $x \in \mathbb{R}$, then $x = \pm 5$.
- Use a calculator to evaluate (state sign first, then value as needed).
 - $\sqrt[4]{4096}$
 - $\sqrt[5]{-243}$
 - $-\sqrt[4]{2401}$
 - $-\sqrt[3]{729}$
 - $\sqrt[3]{-729}$
 - $-8\sqrt[4]{\frac{1}{256}}$
 - $\sqrt[6]{0.015625}$
 - $\sqrt[4]{-6561}$
 - $\frac{3}{2}\sqrt[4]{\frac{16}{81}}$
- Evaluate to the nearest hundredth.
 - $\sqrt[4]{10}$
 - $\sqrt[8]{29}$
 - $\frac{3}{2}\sqrt[3]{-527}$
- Evaluate to the nearest tenth.
 - $\sqrt[5]{-25}$
 - $-5\sqrt[4]{169}$
 - $\frac{1}{2}\sqrt[3]{-81}$
- Identify the *index* and the *radicand* in each radical.
 - $\sqrt[3]{42}$
index: _____
radicand: _____
 - $\sqrt[4]{36}$
index: _____
radicand: _____
 - $5\sqrt{17}$
index: _____
radicand: _____
- Explain the meaning of the index 4 in the radical $\sqrt[4]{36}$.
- Determine whether each statement is **true** or **false**.
 - $\sqrt{30} = \sqrt{5}\sqrt{6}$
 - $\sqrt{6-4} = \sqrt{6} - \sqrt{4}$
 - $\sqrt{3} = \frac{\sqrt{45}}{\sqrt{15}}$
 - $\frac{\sqrt{20}}{\sqrt{10}} = \sqrt{10}$
 - $\sqrt{2} + \sqrt{2} = \sqrt{4}$
 - $\sqrt{2} \times \sqrt{2} = \sqrt{4}$
 - $\sqrt{\frac{1}{2} \cdot 30} = \sqrt{15}$
 - $\frac{1}{2}\sqrt{30} = \sqrt{15}$

9. Write as a *single* radical in the form \sqrt{x} (simplify x).
- $\sqrt{5}\sqrt{7}$
 - $\sqrt{14}\sqrt{2}$
 - $\sqrt{3} \cdot \sqrt{8}$
 - $\sqrt{6} \cdot \sqrt{11}$
 - $\frac{\sqrt{20}}{\sqrt{10}}$
 - $\frac{\sqrt{25}}{\sqrt{5}}$
 - $\frac{\sqrt{10}\sqrt{6}}{\sqrt{2}}$
 - $\frac{\sqrt{81}}{\sqrt{9}}$
10. Express each as a product of radicals (split into two square roots).
- $\sqrt{35}$
 - $\sqrt{33}$
 - $\sqrt{65}$
 - $\sqrt{49}$
11. Consider the statements:
- The cube root of -27 (over the reals) is ± 3 .
 - The fourth roots of 81 (over the reals) are ± 3 .
 - $-\sqrt[3]{1000} = \sqrt[3]{-1000}$.
 - $-\sqrt[4]{16} = \sqrt[4]{-16}$.
- Which are true?
- II and III only
 - I, II, and III only
 - I, II, III, and IV
 - Some other combination
12. In the radical $\sqrt[4]{18}$, the index and radicand are
- index 2, radicand $\sqrt{18}$
 - index 1, radicand 1
 - index 18, radicand 1
 - index 4, radicand 18
13. To the nearest hundredth, evaluate $\sqrt{\frac{7}{8}} + 2\sqrt[4]{\frac{7}{8}}$.
- _____

Entire Radicals and Mixed Radicals — Part One

- Without a calculator, arrange in order from *greatest to least*:
 $3\sqrt{5}$, $5\sqrt{3}$, $\sqrt{15}$, $2\sqrt{8}$, $8\sqrt{2}$.
 - Compute each to the nearest hundredth.
 - Which is more accurate?
 - Exact mixed radical.
- Two students find the hypotenuse PQ of a right triangle with legs $\sqrt{34}$ and $\sqrt{38}$. Louis rounds each leg; Asia simplifies radicals first.
 - Compute each to the nearest hundredth.
 - Which is more accurate?
 - Exact mixed radical.
- Convert each to a *mixed radical* (simplest form).
 - $\sqrt{96}$
 - $\sqrt{242}$
 - $\frac{2}{3}\sqrt{180}$
 - $\frac{1}{8}\sqrt{320}$
 - $\sqrt{245}$
 - $4\sqrt{338}$
 - $\sqrt{1250}$
 - $\sqrt{66}$
 - $-\frac{5}{6}\sqrt{304}$
 - $\sqrt{980}$
 - $4\sqrt{272}$
 - $-3\sqrt{288}$
 - $2\sqrt{369}$
 - $\sqrt{364}$
 - $\frac{2}{5}\sqrt{450}$
 - $\frac{7}{11}\sqrt{341}$
- Convert to a *mixed radical* where the radicand is a whole number.
 - $\sqrt{\frac{2}{9}}$
 - $\sqrt{\frac{5}{4}}$
 - $\sqrt{\frac{18}{25}}$
 - $7\sqrt{\frac{20}{49}}$
- Convert to *entire radical* form.
 - $2\sqrt{6}$
 - $3\sqrt{7}$
 - $5\sqrt{15}$
 - $12\sqrt{2}$
 - $3\sqrt{25}$
 - $-8\sqrt{3}$
 - $9\sqrt{10}$
 - $-4\sqrt{5}$
- Convert the following to *entire radical* form.
 - $\frac{1}{3}\sqrt{27}$
 - 15
 - $\frac{3}{2}\sqrt{8}$
 - $3^2\sqrt{21}$
- Given $\sqrt{6} \approx 2.45$ and $\sqrt{60} \approx 7.75$, approximate:
 - $\sqrt{600}$
 - $\sqrt{6000}$
 - $\sqrt{600\,000}$
 - $\sqrt{0.06}$
 - $\sqrt{0.6}$
 - $\sqrt{24}$
 - $\sqrt{540}$
 - $\sqrt{\frac{6}{25}}$
- Arrange from *greatest to least*:
 $3\sqrt{7}$, $5\sqrt{3}$, $\sqrt{60}$, $2\sqrt{11}$, $\frac{1}{2}\sqrt{200}$.
 - entire radical
 - mixed radical
 - decimal (nearest hundredth)
- In right $\triangle XYZ$ with legs 19 cm and 5 cm, find hypotenuse XY :
 - entire radical
 - mixed radical
 - decimal (nearest hundredth)
- Find the missing side in simplest mixed radical form.
 - legs 4, 8; hypotenuse x
 - legs 5, 6; hypotenuse x
 - hypotenuse 8, leg 6; other leg x
- The length of \overline{KL} for legs $\sqrt{6}$ and $\sqrt{24}$ is
A. $\sqrt{540}$ **B.** $3\sqrt{2}$ **C.** $\sqrt{30}$ **D.** $9\sqrt{2}$
- Without a calculator, which radical is *not* equal to the others?
A. $12\sqrt{2}$ **B.** $\sqrt{288}$ **C.** $6\sqrt{8}$ **D.** $4\sqrt{72}$

13. On a clear day, $d = \sqrt{13h}$ (km), where h metres is eye level above ground. From a 698.2 m building with eye level 1.8 m above the roof, write $d = a\sqrt{b}$ and find $a + b$.
14. Using Heron's formula, a triangle with sides 14, 15, 25 has area $A = p\sqrt{26}$. Find p .
15. A square of side 8 cm is inscribed in a larger square by joining midpoints. If larger side is $p\sqrt{q}$, find pq .

Entire Radicals and Mixed Radicals — Part Two

- Convert the following radicals to mixed radicals in simplest form.
 - $\sqrt[3]{48}$
 - $\sqrt[3]{128}$
 - $\sqrt[3]{2000}$
 - $5\sqrt[3]{-81}$
 - $\frac{5}{6}\sqrt[3]{108}$
 - $5\sqrt[4]{162}$
 - $5\sqrt{192}$
 - $-2\sqrt[3]{625}$
- Convert the following mixed radicals to entire radicals.
 - $2\sqrt[5]{2}$
 - $3\sqrt[3]{4}$
 - $-3\sqrt[4]{3}$
 - $-10\sqrt[3]{5}$
 - $2\sqrt[5]{6}$
 - $\frac{1}{2}\sqrt[3]{16}$
 - $\frac{3}{10}\sqrt[4]{100000}$
 - $-5\sqrt[3]{9}$
- Arrange, least to greatest (no calculator): $7\sqrt[6]{1}$, $-3\sqrt[3]{-27}$, $\frac{5}{2}\sqrt[4]{16}$, $3\sqrt[3]{64}$.
- Consider $2\sqrt[3]{11}$, $3\sqrt[3]{3}$, $4\sqrt[3]{2}$, $2\sqrt[3]{6}$.
 - Explain how to compare without a calculator.
 - Order least to greatest.
- $\sqrt[3]{240}$ is equivalent to
A. $2\sqrt[3]{40}$ **B.** $4\sqrt[3]{15}$ **C.** $2\sqrt[3]{30}$ **D.** $8\sqrt[3]{30}$
- Consider the statements:
 - $-3\sqrt[4]{8} = 3\sqrt[4]{-8}$,
 - $-2\sqrt[3]{7} = 2\sqrt[3]{-7}$.**A.** Both true **B.** Both false **C.** 1 true, 2 false
D. 1 false, 2 true
- The mixed radical $\frac{1}{12}\sqrt[3]{128}$ equals $a\sqrt[3]{b}$ in simplest form. Find $a + b$ (nearest tenth).
- $\sqrt{3x} \cdot \sqrt{2x}$ is equivalent to
A. $\sqrt{6x}$ **B.** $\sqrt{36x^2}$ **C.** $6\sqrt{x}$ **D.** $x\sqrt{6}$
- Express as an *entire* radical.
 - $6\sqrt{y}$
 - $8\sqrt{c^2}$
 - $10\sqrt{2yz^3}$
 - $-3\sqrt[3]{x^2}$
 - $c\sqrt{c}$
 - $x\sqrt{3y^3}$
 - $11c^2\sqrt{c^2d}$
 - $5a^3b\sqrt{3a^2b}$
- Express as a mixed radical in simplest form.
 - $\sqrt{a^5}$
 - $\sqrt{t^3}$
 - $\sqrt{x^{11}}$
 - $\sqrt[3]{x^4}$
 - $\sqrt[3]{b^8}$
 - $\sqrt[4]{x^6}$
- Express as a mixed radical.
 - $\sqrt{8y^2}$
 - $\sqrt{16p^3}$
 - $\sqrt{75y^3z^4}$
 - $\sqrt{300a^9w^7}$
 - $5\sqrt{28c^4d^3}$
 - $-6\sqrt{29a^4b^8}$

Quick Check

- Which is not a prime factor of 14014?
A. 7 B. 11 C. 13 D. 17
- How many numbers in the list 7, 11, 17, 21 are prime factors of 3234?
A. 1 B. 2 C. 3 D. 4
- The sum of prime factors of 160797 is _____.
A. 7 B. 11 C. 13 D. 17
- The GCF of 6699 and 8265 is _____.
A. 1 B. 2 C. 3 D. 4
- LCM of 14 and 105 equals GCF of P, Q . Which must be false?
**A. P multiple of 7
B. Q multiple of 21
C. $P < 200$
D. $Q > 2000$**
- If x is a perfect square, minimum value of d (in the given factor tree) is
A. 2 B. 3 C. 6 D. 9
- If x is a perfect cube, the minimum value of x is _____.
A. 1 B. 2 C. 3 D. 4
- \otimes is irrational. Its decimal representation is
**A. terminating & repeating
B. terminating & non-repeating
C. non-terminating & repeating
D. non-terminating & non-repeating**
- Which are rational? (I) 1.0100100001... (non-repeating), (II) $\sqrt[3]{\frac{8}{27}}$, (III) 0.04, (IV) 0.29
**A. III, IV
B. II, III, IV
C. I, II, III, IV
D. Other**
- The rational number $1.\overline{54}$ as $\frac{c}{d}$; the value of c is
A. 17 B. 11 C. 6 D. 4
- M, N irrationals with $30 < M < 40, 3 < N < 4$. The value of $\sqrt{M} + \sqrt{N}$ is best represented by
A. P B. Q C. R D. S
- Largest among $\sqrt[3]{67}, \sqrt[4]{98}, \sqrt{19}, \sqrt[5]{201}$ is
A. $\sqrt{19}$ B. $\sqrt[4]{98}$ C. $\sqrt[3]{67}$ D. $\sqrt[5]{201}$
- The length $12\sqrt[4]{4000}$ m has index and radicand
**A. 4 and 4000
B. 12 and 4000
C. 4 and 12
D. 4000 and 4**
- When $7\sqrt[3]{6}$ is written as an entire radical, the radicand is _____.
A. 1 B. 2 C. 3 D. 4
- Which statements are true? 1) $35 = 7\sqrt{5}$ 2) $\sqrt{28} = 2\sqrt{7}$ 3) $4\sqrt{3} = 48$
**A. 1 only
B. 2 only
C. 1 and 2 only
D. 2 and 3 only**
- Three students rewrote $\sqrt{4050}$. Who is correct?
**A. I only
B. II and III
C. All three
D. Other**
- Circle area: if area 120π cm², radius is
A. 60 B. $12\sqrt{10}$ C. $2\sqrt{30}$ D. $2\sqrt{15}$
- A cube with volume 720 mm³ has edge length $a\sqrt[3]{b}$ mm. Find $a + b$.
A. 60 B. $12\sqrt{10}$ C. $2\sqrt{30}$ D. $2\sqrt{15}$
- Consider $4\sqrt[3]{3}, 5\sqrt{x}, 16\sqrt{y}$. Which is correct?
**A. $x < y < z$
B. $z < x < y$
C. $y < z < x$
D. $z < y < x$**