

9.7 Higher Roots

443. (a) 3 (b) 2 (c) 3

445. (a) 5 (b) 6 (c) 4

447. (a) -4 (b) not real (c) -3

449. (a) -8 (b) not a real number (c) -1

451. (a) a (b) $|b|$

453. (a) $|k|$ (b) $|p|$

455. (a) a^2 (b) b^9

457. (a) r^2 (b) s^{10}

459. (a) $-2c^3$ (b) $5d^5$

461. (a) $2r^2$ (b) $3s^6$

463. (a) $u^5\sqrt{u^2}$ (b) $v^6\sqrt{v^5}$

465. (a) $p^5\sqrt{p^3}$ (b) $q^2\sqrt[3]{q^2}$

467. (a) $5\sqrt[3]{5}$ (b) $2\sqrt[6]{2}$

469. (a) $5^4\sqrt{5}$ (b) $3^3\sqrt[3]{3}$

471. (a) $2a^5\sqrt{3a^2}$ (b) $5b^3\sqrt[3]{3b}$

473. (a) $8p^3\sqrt{p^2}$ (b) $3q^4\sqrt[4]{4q^3}$

475. (a) $-3\sqrt[5]{2}$ (b) not real

477. (a) -2 (b) not real

479. (a) d (b) $|m|$

481. (a) r^2 (b) $|c^3|$

483. (a) -5 (b) $4m^4\sqrt{m^2}$

485. (a) $3\sqrt[3]{6}$ (b) $2|r^4\sqrt[4]{2r^3}$

487. (a) $\frac{2r^2\sqrt[5]{3rs^2}}{s}$ (b) $\frac{2u^6\sqrt[6]{2uv^3}}{v}$

489. (a) $\frac{5u^3\sqrt[3]{5u}}{v}$ (b) $\frac{3c^5\sqrt[4]{9c}}{d^2}$

491. (a) $2\sqrt[3]{15q}$ (b) $-4\sqrt[4]{27}$

493. (a) $42^{12}\sqrt[4]{4y}$ (b) $14^{10}\sqrt[5]{5z}$

495. (a) $5\sqrt[3]{5} - 3\sqrt[3]{2}$ (b) $-2\sqrt[4]{3}$

497. (a) $3^4\sqrt[3]{3} + 5^4\sqrt[4]{2}$ (b) $13\sqrt[3]{2}$

499. (a) $2b^3\sqrt[3]{10b^2} + 3b^3\sqrt[3]{10}$ (b) $2v^2\sqrt[4]{10v^2} - 4\sqrt[4]{5v^3}$

501. 2

503. $|b|$

505. $5d^5$

507. $s^2\sqrt[4]{s^2}$

509. $2y^4\sqrt[4]{3y^2}$

511. not real

513. $2x^5\sqrt[5]{2x}$

515. $\frac{2u^3\sqrt[6]{2uv^3}}{v}$

517. $4\sqrt[4]{2}$

519. $3u^4\sqrt[4]{6u^3} + 4^4\sqrt[4]{3u^3}$

521. 5

523. Answers will vary.