

INTERMEDIATE ALGEBRA
TEST CHAPTER (9.1 to 9.4)

NAME _____

In problems 1-16, simplify each expression.

ANSWERS

1. $f(X) = \sqrt{2x-6}$; find the value of $f(11)$

1. _____

2. $\sqrt{25} - \sqrt{9}$

2. _____

3. $\sqrt{25-9}$

3. _____

4. $\sqrt{\frac{4}{9}} - \sqrt{\frac{25}{36}}$

4. _____

5. $\sqrt{3 \cdot 10^2 - 5^2 \cdot (8)}$

5. _____

6. $-\sqrt{8 \cdot 5^2 - 3 \cdot 10^2}$

6. _____

7. $\frac{7 - \sqrt{(-7)^2 - 4(6)(-3)}}{2(6)}$

7. _____

8. $\sqrt{(y+7)^2}$

8. _____

9. $\sqrt{(y^2 - 14y + 49)}$

9. _____

10. If $f(x) = \sqrt[3]{x+12}$; find the value of $f(-9)$

10. _____

11. $\sqrt[4]{81 \cdot 10^{-4}}$

11. _____

12. $\sqrt[5]{64} - \sqrt[3]{-27}$

12. _____

13. $\sqrt[4]{(3x+2)^4}$

13. _____

14. $(-64)^{\frac{4}{3}}$

14. _____

15. $-243^{\frac{1}{5}}$

15. _____

16. $\left(\frac{8}{27}\right)^{-\frac{2}{3}}$

16. _____

In problems 17-26, simplify the following expressions.

17. $6^{\frac{-1}{2}} \cdot 6^{\frac{5}{2}}$

17. _____

18. $\frac{5^{\frac{2}{7}}}{5^{\frac{1}{2}}}$

18. _____

19. $\left(2^{\frac{2}{3}}\right)^{\frac{3}{4}}$

19. _____

20. $\left(b^{\frac{5}{6}} \cdot b^{\frac{2}{3}}\right)^{\frac{1}{3}}$

20. _____

21. $\left(z^{\frac{-2}{5}}\right)\left(z^{\frac{3}{5}}\right)$

21. _____

22. $p^{\frac{4}{5}}\left(p^{\frac{6}{5}} + p^{\frac{2}{5}}\right)$

22. _____

23. $\frac{\left(x^{\frac{-4}{5}}\right)\left(x^{\frac{5}{3}}\right)}{\left(x^{\frac{6}{7}}\right)}$

23. _____

24. $\frac{-4a^{\frac{1}{2}}b^3}{8a^{\frac{1}{3}}b^{\frac{-1}{2}}}$

24. _____

25. $\frac{\left(25a^{\frac{1}{2}}b^2\right)^{\frac{-1}{2}}}{ab^{\frac{-1}{3}}}$

25. _____

26. $\frac{\left(27a^3b\right)^{\frac{-1}{3}}}{\left(4ab^{-3}\right)^{\frac{1}{2}}}$

26. _____

In problems 27-40, simplify the radical expressions. Assume that all variables are greater than or equal to zero.

27. $\sqrt{250}$

27. _____

28. $5\sqrt{45}$

28. _____

29. $-\sqrt[4]{162}$

29. _____

30. $\sqrt{27q^3r^6}$

30. _____

31. $\sqrt{18q^6r^8s^7}$

31. _____

32. $\sqrt[3]{x^5y^8}$

32. _____

33. $\sqrt[4]{32x^{10}y^6}$

33. _____

34. $\sqrt[3]{(x-y)^4}$

34. _____

35. $\sqrt{16x^2+16y^2}$

35. _____

36. $\sqrt[3]{50x^2y^5} \cdot \sqrt[3]{40x^5y^7}$

36. _____

37. $\sqrt{3x} \cdot \sqrt{12x^5}$

37. _____

38. $\sqrt[4]{8x^3y^5} \cdot \sqrt[4]{6x^{11}y}$

38. _____

39. $\frac{\sqrt[3]{250x^8y^{14}}}{\sqrt[3]{2x^2y^2}}$

39. _____

40. $\frac{\sqrt{810x^{11}}}{\sqrt{10x}}$

40. _____

Intermediate Algebra

NAME _____

TEST Chapter (9.5 to 9.9)

In problems 1-10 add, subtract, multiply or divide as indicated. Assume all variables are positive or zero.

Answers

1. $\sqrt{24} + \sqrt{150}$

1. _____

2. $3\sqrt{2} - 3\sqrt{25} - 2\sqrt{18}$

2. _____

3. $5\sqrt{18} - x\sqrt{75} - 5\sqrt{2} + 2\sqrt{27x^2}$

3. _____

4. $2b\sqrt{8b^8c^5} - 4c\sqrt{18b^{10}c^3}$

4. _____

5. $5b\sqrt{20b^{13}c^8} - 2c\sqrt{45b^{15}c^6}$

5. _____

6. $4\sqrt{5}(\sqrt{11} + \sqrt{5})$

6. _____

7. $(\sqrt{10} + 5)(\sqrt{10} - 5)$

7. _____

8. $(5\sqrt{5} - 4)^2$

8. _____

9. $(2\sqrt{7} + 4)(5\sqrt{7} + 2)$

9. _____

10. $5\sqrt[3]{x^2}(\sqrt[3]{25x} - \sqrt[3]{10x^5})$

10. _____

In problems 11-15, rationalize each denominator. Assume all variables are positive.

11. $\sqrt{\frac{3x^4y^9}{27z}}$

11. _____

12. $\sqrt[3]{\frac{7}{9x^2}}$

12. _____

13. $\sqrt[4]{\frac{3}{x^2y^3}}$

13. _____

14. $\frac{7 - \sqrt{2}}{7 + \sqrt{2}}$

14. _____

15. $\frac{5}{\sqrt{2} - \sqrt{7}}$

15. _____

Evaluate the radical function at the indicated values.

16. $f(x) = -\sqrt{2x-3}$ a) $f(2)$ b) $f(-3)$

16. a. _____

b. _____

17. $f(x) = \sqrt[3]{\frac{-9x}{x+5}}$ a) $f(3)$ b) $f(-6)$

17. a. _____

b. _____

Find the domain of the radical function.

18. $f(x) = \sqrt{8-2x}$

18. _____

In problems 19-25. Solve each equation.

19. $\sqrt{3x+1} = 4$

19. _____

20. $\sqrt[3]{x-4} = 4$

20. _____

21. $\sqrt[4]{s+1} = 2$

21. _____

22. $\sqrt[3]{-10+8r} - \sqrt[3]{7-5r} = 0$

22. _____

23. $\sqrt{2y^2-9} = y$

23. _____

24. $\sqrt{x+2} = x-10$

24. _____

25. $\sqrt{p^2-5p+64} = p+3$

25. _____

In problems 26-33, perform the indicated operation.

26. $\sqrt{-2} \cdot \sqrt{-10} \cdot \sqrt{-5}$

26. _____

27. $(6-6i)+(3+4i)$

27. _____

28. $8i-(-2-i^2)$

28. _____

29. $2i(4-5i)$

29. _____

30. $(10-3i)(4+7i)$

30. _____

31. $\frac{3}{7+9i}$

31. _____

32. $\frac{3-8i}{-2i}$

32. _____

33. $\frac{10-2i}{1-i}$

33. _____

For problems 34-35, simplify.

34. i^{213}

34. _____

35. i^{-65}

35. _____