

Student: _____
Date: _____
Time: _____

Instructor: shannon gracey
Course: MATH 64/Summer 2013
Book: Blitzer: Introductory & Intermediate
Algebra for College Students, 4e

Assignment: Chapter 10 Practice

1. Find the indicated function values for the function.

$$f(x) = \sqrt[3]{x-9}, f(134), f(17), f(-18), f(-55)$$

$$f(134) = \square \text{ (Simplify your answer.)}$$

$$f(17) = \square \text{ (Simplify your answer.)}$$

$$f(-18) = \square \text{ (Simplify your answer.)}$$

$$f(-55) = \square \text{ (Simplify your answer.)}$$

ID: 10.1.55

2. Multiply as indicated. If possible, simplify any radical expressions that appear in the product.

$$(\sqrt{6} + \sqrt{19})(\sqrt{5} + \sqrt{17})$$

$$(\sqrt{6} + \sqrt{19})(\sqrt{5} + \sqrt{17}) = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.5.17

3. Perform the indicated operation.

$$\frac{\sqrt{45}}{2} + \frac{\sqrt{125}}{9}$$

$$\frac{\sqrt{45}}{2} + \frac{\sqrt{125}}{9} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.4.67

4. Express the function, f , in simplified form. Assume that x can be any real number.

$$f(x) = \sqrt{144(x+15)^2}$$

$$f(x) = \square \text{ (Type an exact answer, using radicals as needed.)}$$

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5. If $f(x) = x + \sqrt{x+6}$, find all values of x for which $f(x) = 6$.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is $\{\square\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)
- B. The solution is the empty set.

ID: 10.6.39

6. Perform the indicated operation.

$$\frac{10 - 9i}{7i}$$

$$\frac{10 - 9i}{7i} = \square \text{ (Type your answer in the form } a + bi\text{.)}$$

ID: 10.7.81

7. Multiply as indicated. If possible, simplify any radical expressions that appear in the product.

$$(\sqrt{x} - \sqrt{7y})^2$$

$$(\sqrt{x} - \sqrt{7y})^2 = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.5.25

8. Solve the radical equation.

$$\sqrt{7x-3} = \sqrt{6x+6}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is $\{\square\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)
- B. The solution is the empty set.

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9. Find the indicated root, or state that the expression is not a real number.

$$-\sqrt[4]{256}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your answer.

- A. $-\sqrt[4]{256} = \blacksquare$
- B. The expression is not a real number.

ID: 10.1.71

10. A basketball player's hang time is the time spent in the air when shooting a basket. The formula $t = \frac{\sqrt{d}}{2}$ models hang time, t , in seconds, in terms of the vertical distance of a player's jump, d , in feet. When a particular player dunked a basketball, his hang time for the shot was approximately 1.14 seconds. What was the vertical distance, d , of his jump, rounded to the nearest tenth?

The jump was feet. (Round to the nearest tenth as needed.)

ID: 10.6.51

11. Rewrite the expression with rational exponents.

$$\left(\sqrt[3]{5xy^2}\right)^4$$

$$\left(\sqrt[3]{5xy^2}\right)^4 = \square$$

(Use integers or fractions for any numbers in the expression. Type exponential notation with positive exponents.)

ID: 10.2.35

12. Find the product.

$$\sqrt{-16} \cdot \sqrt{-9}$$

$$\sqrt{-16} \cdot \sqrt{-9} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

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13. Simplify using the quotient rule. Assume that all variables represent positive real numbers.

$$\sqrt{\frac{x^2}{9y^6}}$$

$$\sqrt{\frac{x^2}{9y^6}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.4.33

14. Use properties of rational exponents to simplify the expression.

$$\frac{7^{2/3} \cdot 7^{5/12}}{7^{1/12}}$$

$$\frac{7^{2/3} \cdot 7^{5/12}}{7^{1/12}} = \square$$

(Use integers or fractions for any numbers in the expression. Type exponential notation with positive exponents.)

ID: 10.2.75

15. Simplify using the quotient rule. Assume that all variables represent positive real numbers.

$$\sqrt[4]{\frac{4y^7}{x^{16}}}$$

$$\sqrt[4]{\frac{4y^7}{x^{16}}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.4.41

16. Simplify by factoring. Assume that all variables in the radicand represent positive real numbers and that the radicand does not involve negative quantities raised to even powers.

$$\sqrt[3]{x^{17}y^9z}$$

$$\sqrt[3]{x^{17}y^9z} = \square \text{ (Type an exact answer, using radicals as needed.)}$$

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Assignment: Chapter 10 Practice

17. Simplify, if possible.

$$\sqrt{-175}$$

$$\sqrt{-175} = \square$$

(Simplify your answer. Type an exact answer, using radicals and i needed.)

ID: 10.7.7

18. Rationalize the denominator.

$$\sqrt{\frac{13}{x}}$$

$$\sqrt{\frac{13}{x}} = \square$$

(Type an exact answer, using radicals as needed.)

ID: 10.5.41

19. Simplify the expression.

$$\sqrt{4x^{12}}$$

$$\sqrt{4x^{12}} = \square$$

(Simplify your answer.)

ID: 10.1.39

20. Multiply and simplify. Assume that all variables in a radicand represent positive real numbers and no radicands involve negative quantities raised to even powers.

$$\sqrt{3x} \cdot \sqrt{6y}$$

$$\sqrt{3x} \cdot \sqrt{6y} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

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21. If 5 times a number is decreased by 4, the principal square root of this difference is 2 less than the number. Find the number(s).

What is the number?

(Use a comma to separate answers as needed.)

ID: 10.6.47

22. Evaluate the expression, or state that the expression is not a real number.

$$\sqrt{25 - 100}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your answer.

A. $\sqrt{25 - 100} = \blacksquare$

B. The expression is not a real number.

ID: 10.1.19

23. Simplify by factoring. Assume that all variables in a radicand represent positive real numbers and no radicands involve negative quantities raised to even powers.

$$\sqrt[5]{729x^7y^{11}}$$

$\sqrt[5]{729x^7y^{11}} = \square$ (Type an exact answer, using radicals as needed.)

ID: 10.3.55

24. Rationalize the denominator. Simplify, if possible.

$$\frac{7}{\sqrt{2} + 1}$$

$\frac{7}{\sqrt{2} + 1} = \square$ (Type an exact answer, using radicals as needed.)

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25. Find the product.

$$(8 + i)(7 + 6i)$$

$$(8 + i)(7 + 6i) = \square$$

(Type your answer in the form $a + bi$.)

ID: 10.7.39

26. Use rational exponents to simplify the expression. If rational exponents appear after simplifying, write the answer in radical notation. Assume that all variables represent positive numbers.

$$\sqrt[3]{\sqrt[4]{7x}}$$

$$\sqrt[3]{\sqrt[4]{7x}} = \square$$

ID: 10.2.107

27. Multiply as indicated. If possible, simplify any radical expressions that appear in the product.

$$(2 - \sqrt{x})(5 - \sqrt{x})$$

$$(2 - \sqrt{x})(5 - \sqrt{x}) = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.5.33

28. Rationalize the numerator. Simplify, if possible.

$$\frac{\sqrt[3]{16x}}{\sqrt[3]{y}}$$

$$\frac{\sqrt[3]{16x}}{\sqrt[3]{y}} = \square$$

(Type an exact answer, using radicals as needed.)

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Assignment: Chapter 10 Practice

29. The function given below models the number of calories per day, $f(x)$, a person needs to maintain life in terms of that person's weight, x , in kilograms (1 kilogram is approximately 2.2 pounds). Use this model and a calculator to determine how many calories per day the person, who weighs 50 kilograms (approximately 110 pounds), needs to maintain life.

$$f(x) = 70x^{3/4}$$

A person that weighs 50 kilograms needs about calories per day.
(Round to the nearest calorie as needed.)

ID: 10.2.127

30. Multiply and simplify.

$$\sqrt[3]{20} \cdot \sqrt[3]{2}$$

$$\sqrt[3]{20} \cdot \sqrt[3]{2} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.3.71

31. Divide and simplify to form $a + bi$.

$$\frac{8i}{5 - 7i}$$

$$\frac{8i}{5 - 7i} = \square$$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Type your answer in the form $a + bi$.)

ID: 10.7.69

32. Solve the radical equation.

$$(x + 2)^{1/2} + 6 = 4$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is $\{\square\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

B. The solution is the empty set.

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33. Use rational exponents to simplify the expression. If rational exponents appear after simplifying, write the answer in radical notation. Assume that all variables represent positive numbers.

$$\sqrt{2} \cdot \sqrt[3]{2}$$

$$\sqrt{2} \cdot \sqrt[3]{2} = \square$$

ID: 10.2.93

34. Simplify the expression.

$$(-i)^{14}$$

$$(-i)^{14} = \square$$

ID: 10.7.95

35. Find the cube root.

$$\sqrt[3]{1000}$$

$$\sqrt[3]{1000} = \square$$

ID: 10.1.47

36. Add or subtract as indicated. Assume that all variables represent positive real numbers.

$$4\sqrt{7} - \sqrt[3]{x} + 3\sqrt{7} + 4\sqrt[3]{x}$$

$$4\sqrt{7} - \sqrt[3]{x} + 3\sqrt{7} + 4\sqrt[3]{x} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.4.9

37. Multiply.

$$(9 + 7i)(9 - 7i)$$

$$(9 + 7i)(9 - 7i) = \square$$

(Type your answer in the form $a + bi$.)

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38. Use properties of rational exponents to simplify the expression. Assume that all variables represent positive numbers.

$$(y^{-1/6})^{5/4}$$

$$(y^{-1/6})^{5/4} = \square$$

(Use integers or fractions for any numbers in the expression. Type exponential notation with positive exponents.)

ID: 10.2.67

39. Use radical notation to rewrite the expression. Then simplify, if possible.

$$144^{\frac{1}{2}}$$

$$144^{\frac{1}{2}} = \square$$

(Simplify your answer.)

ID: 10.2.1

40. Find the product.

$$4i(2 + 7i)$$

$$4i(2 + 7i) = \square$$

(Simplify your answer. Type your answer in the form $a + bi$.)

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41. Find the domain of the square root function. Then use the domain to match the radical function with its graph.

$$f(x) = \sqrt{x - 1}$$

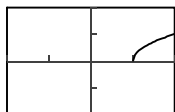
What is the domain of $f(x) = \sqrt{x - 1}$?

The domain of $f(x)$ is .

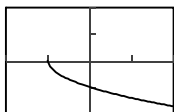
(Type your answer in interval notation.)

Use the domain to match the radical function with its graph. The graphs are shown in $[-2, 2, 1]$ by $[-2, 2, 1]$ viewing rectangles. Choose the correct graph below.

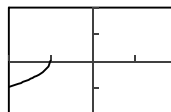
A.



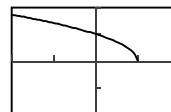
B.



C.



D.



ID: 10.1.27

42. Subtract as indicated.

$$(-8 + 9i) - (-4 - 10i)$$

$$(-8 + 9i) - (-4 - 10i) = \text{}$$

(Simplify your answer. Type your answer in the form $a + bi$.)

ID: 10.7.27

43. Use the product rule to multiply.

$$\sqrt{3} \cdot \sqrt{11}$$

$$\sqrt{3} \cdot \sqrt{11} = \text{}$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

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44. Solve the radical equation.

$$(4x + 5)^{1/3} + 3 = 6$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is { }.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)
- B. The solution is the empty set.

ID: 10.6.27

45. Multiply as indicated. If possible, simplify any radical expressions that appear in the product.

$$\sqrt[3]{x}(\sqrt[3]{375x^2} - \sqrt[3]{x})$$

$$\sqrt[3]{x}(\sqrt[3]{375x^2} - \sqrt[3]{x}) = \square$$

(Type an exact answer, using radicals as needed.)

ID: 10.5.9

46. Rationalize the denominator.

$$\frac{12}{\sqrt[5]{27x^3}}$$

$$\frac{12}{\sqrt[5]{27x^3}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed. Use integers or fractions for any numbers in the expression.)

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Assignment: Chapter 10 Practice

47. Rewrite the expression with a positive rational exponent. Simplify, if possible.

$$256^{-\frac{3}{4}}$$

Rewrite the expression.

$$256^{-\frac{3}{4}} = \square$$

(Use integers or fractions for any numbers in the expression. Type exponential notation with positive exponents. Do not simplify.)

Now simplify.

$$256^{-\frac{3}{4}} = \square \text{ (Type an integer or a fraction.)}$$

ID: 10.2.43

48. Divide and simplify to the form $a + bi$.

$$\frac{2}{9 + i}$$

$$\frac{2}{9 + i} = \square$$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Type your answer in the form $a + bi$.)

ID: 10.7.63

49. Use radical notation to rewrite the expression. Simplify, if possible.

$$625^{3/4} + 125^{2/3}$$

Rewrite the expression using radical notation.

$$625^{3/4} + 125^{2/3} = \square \text{ (Do not simplify.)}$$

Now simplify.

$$625^{3/4} + 125^{2/3} = \square$$

ID: 10.2.17

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50. Rewrite the expression with a positive rational exponent. Simplify, if possible.

$$(-3125)^{-2/5}$$

$$(-3125)^{-2/5} = \square$$

ID: 10.2.49

51. Rewrite the expression with rational exponents.

$$\sqrt[3]{19}$$

$$\sqrt[3]{19} = \square$$

ID: 10.2.23

52. Simplify the expression.

$$i^4 + i^{16}$$

$$i^4 + i^{16} = \square$$

ID: 10.7.99

53. Rationalize the denominator.

$$\frac{6}{\sqrt[3]{11x^2}}$$

$$\frac{6}{\sqrt[3]{11x^2}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed. Use integers or fractions for any numbers in the expression.)

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54. Use rational exponents to simplify the expression. If rational exponents appear after simplifying, write the answer in radical notation. Assume that all variables represent positive numbers.

$${}^{24}\sqrt{(7y)^3}$$

$${}^{24}\sqrt{(7y)^3} = \square$$

ID: 10.2.87

55. Subtract.

$$(4 + 5i) - (2 + 3i)$$

$$(4 + 5i) - (2 + 3i) = \square$$

(Type your answer in the form $a + bi$.)

ID: 10.7.21

56. Rationalize the denominator.

$$\frac{30}{10\sqrt{5} - 7\sqrt{10}}$$

$$\frac{30}{10\sqrt{5} - 7\sqrt{10}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed. Use integers or fractions for any numbers in the expression.)

ID: 10.5.83

57. Multiply.

$$(3 + 7i)^2$$

$$(3 + 7i)^2 = \square$$

(Type your answer in the form $a + bi$.)

ID: 10.7.51

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58. Simplify the expression. Assume that all variables represent positive numbers.

$$(64x^{-3}y^9)^{-1/3}(xy^{1/2})$$

$$(64x^{-3}y^9)^{-1/3}(xy^{1/2}) = \square$$

ID: 10.2.121

59. Use properties of rational exponents to simplify the expression. Assume that all variables represent positive numbers.

$$x^{\frac{1}{6}} \cdot x^{\frac{1}{7}}$$

$$x^{\frac{1}{6}} \cdot x^{\frac{1}{7}} = \square$$

(Use integers or fractions for any numbers in the expression. Type exponential notation with positive exponents.)

ID: 10.2.59

60. Divide and, if possible, simplify. Assume that all variables represent positive real numbers.

$$\frac{\sqrt[3]{48x^9y^9}}{\sqrt[3]{6y^3}}$$

$$\frac{\sqrt[3]{48x^9y^9}}{\sqrt[3]{6y^3}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.4.59

61. Rewrite the expression with rational exponents.

$$\sqrt[6]{x^5}$$

$$\sqrt[6]{x^5} = \square$$

(Use integers or fractions for any numbers in the expression. Type exponential notation with positive exponents.)

ID: 10.2.29

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62. Simplify the radical expression, and then rationalize the denominator.

$$\sqrt{\frac{4m^4n^5}{8m^5n^4}}$$

$$\sqrt{\frac{4m^4n^5}{8m^5n^4}} = \square \text{ (Type an exact answer, using radicals as needed.)}$$

ID: 10.5.69

63. Use the product rule to multiply.

$$\sqrt[5]{9x^3} \cdot \sqrt[5]{2x}$$

$$\sqrt[5]{9x^3} \cdot \sqrt[5]{2x} = \square \text{ (Type an exact answer, using radicals as needed.)}$$

ID: 10.3.9

64. Simplify, if possible.

$$\sqrt{-16}$$

$$\sqrt{-16} = \square$$

(Simplify your answer. Type an exact answer, using radicals and i as needed.)

ID: 10.7.1

65. Simplify, if possible.

$$-10 - \sqrt{-18}$$

$$-10 - \sqrt{-18} = \square$$

(Simplify your answer. Type an exact answer, using radicals and i as needed.)

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66. Use radical notation to rewrite the expression. Simplify, if possible.

$$(4xy^6)^{1/7}$$

Rewrite the expression using radical notation.

$$(4xy^6)^{1/7} = \square$$

ID: 10.2.9

67. Use the product rule to multiply.

$$\sqrt{\frac{2x}{9}} \cdot \sqrt{\frac{9}{2}}$$

$$\sqrt{\frac{2x}{9}} \cdot \sqrt{\frac{9}{2}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.3.15

68. Simplify the expression.

$$i^4$$

$$i^4 = \square$$

ID: 10.7.89

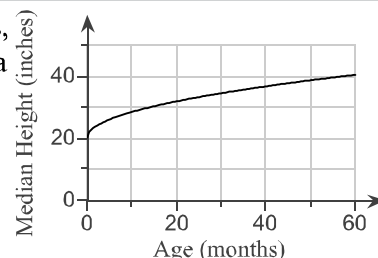
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69.

The function $f(x) = 2.6\sqrt{x} + 20.2$ models the median height, $f(x)$, in inches, of boys who are x months of age. The graph of f is shown. Complete parts a through c.



a. According to the model, what is the median height of boys who are 48 months, or four years, old? Use a calculator.

inches (Round to the nearest tenth as needed.)

The actual median height for boys at 48 months is 40.4 inches. Does the model overestimate or underestimate the actual height?

- Underestimates
 Overestimates
 None of the above

By how much?

inches (Round to the nearest tenth as needed.)

b. Use the model to find the average rate of change, in inches per month, between birth and 10 months.

The average rate of change is inches per month.
(Round to the nearest tenth as needed.)

c. Use the model to find the average rate of change, in inches per month, between 50 and 60 months.

The average rate of change is inches per month.
(Round to the nearest tenth as needed.)

How does this compare with your answer in part (b)?

- A. The average rate of change between 50 months and 60 months is greater than the average rate of change between birth and 10 months.
 B. The average rate of change between 50 months and 60 months is less than the average rate of change between birth and 10 months.
 C. The average rate of change between 50 months and 60 months is equal to the average rate of change between birth and 10 months.

How is this difference shown by the graph?

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69. (cont.)
- A. The graph is constant.
 - B. The graph starts out shallow but becomes steep.
 - C. The graph starts out steep but becomes shallow.

ID: 10.1.101

70. Use the quotient rule to divide and then simplify. All variables in radicands represent positive real numbers.

$$\frac{\sqrt{x^4y^5}}{\sqrt{x^2y^3}}$$

$$\frac{\sqrt{x^4y^5}}{\sqrt{x^2y^3}} = \square$$

(Type an exact answer, using radicals as needed. Simplify your answer.)

ID: 10.4.51

71. Solve the radical equation.

$$\sqrt{8x - 8} = 4$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is $\{\square\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)
- B. The solution is the empty set.

ID: 10.6.1

72. Multiply and simplify. Assume that all variables in a radicand represent positive real numbers and no radicands involve negative quantities raised to even powers.

$$\sqrt[5]{16x^6y^{12}z^{10}} \cdot \sqrt[5]{4xy^2z}$$

$$\sqrt[5]{16x^6y^{12}z^{10}} \cdot \sqrt[5]{4xy^2z} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.3.79

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73. Solve the radical equation.

$$\sqrt[3]{4x - 76} - 2 = 0$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is $\{\square\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)
- B. The solution is the empty set.

ID: 10.6.19

74. Simplify the expression. Assume that all variables in a radicand represent positive real numbers and no radicands involve negative quantities raised to even powers.

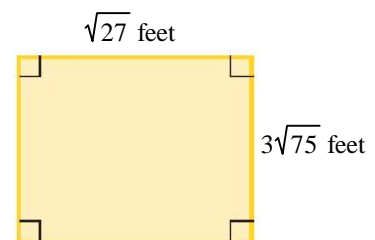
$$(-5xy^2\sqrt{5x})(xy\sqrt{15x})$$

$$(-5xy^2\sqrt{5x})(xy\sqrt{15x}) = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.3.87

75. Find the perimeter and area of the rectangle to the right.



The perimeter of the rectangle is \square feet.
(Type an exact answer, using radicals as needed.)

The area of the rectangle is \square square feet.
(Type an exact answer, using radicals as needed.)

ID: 10.4.81

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Assignment: Chapter 10 Practice

76. Add or subtract as indicated. You will need to simplify terms to identify the like radicals.

$$8\sqrt[3]{81} + \sqrt[3]{192}$$

$$8\sqrt[3]{81} + \sqrt[3]{192} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.4.17

77. Find the indicated root, or state that the expression is not a real number.

$$-\sqrt[4]{16}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your answer.

A. $-\sqrt[4]{16} = \square$

B. The expression is not a real number.

ID: 10.1.63

78. Rationalize the denominator.

$$\sqrt[3]{\frac{11}{2}}$$

$$\sqrt[3]{\frac{11}{2}} = \square \text{ (Type an exact answer, using radicals as needed.)}$$

ID: 10.5.49

79. Multiply as indicated. If possible, simplify any radical expressions that appear in the product.

$$\sqrt{3}(x + \sqrt{10})$$

$$\sqrt{3}(x + \sqrt{10}) = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.5.1

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Assignment: Chapter 10 Practice

80. Perform the indicated operations. Assume that all variables represent positive real numbers.

$$4x^2\sqrt{32xy} - \frac{\sqrt{64x^2y^4}}{\sqrt{2x^{-3}y^3}}$$

$$4x^2\sqrt{32xy} - \frac{\sqrt{64x^2y^4}}{\sqrt{2x^{-3}y^3}} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

ID: 10.4.73

81. Evaluate the expression or state that the expression is not a real number.

$$-\sqrt{\frac{25}{64}}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. $-\sqrt{\frac{25}{64}} = \square$ (Type an integer or a simplified fraction.)

B. The square root is not a real number.

ID: 10.1.9

82. Simplify by factoring.

$$\sqrt{40x}$$

$$\sqrt{40x} = \square \text{ (Type an exact answer, using radicals as needed.)}$$

ID: 10.3.25

83. Solve the radical equation.

$$\sqrt{x+1} + \sqrt{x-2} = 3$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is $\{\square\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)

B. The solution is the empty set.

ID: 10.6.23

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Assignment: Chapter 10 Practice

84. Evaluate the expression, or state that the expression is not a real number.

$$\sqrt{16}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your answer.

- A. The expression is a real number. $\sqrt{16} = \blacksquare$
- B. The expression is not a real number.

ID: 10.1.1

85. Simplify the given expression.

$$\sqrt{5} + 2\sqrt{5}$$

$$\sqrt{5} + 2\sqrt{5} = \square \text{ (Type an exact answer, using radicals as needed.)}$$

ID: 10.4.1

86. Divide and simplify to the form $a + bi$.

$$\frac{2 - 3i}{8 + 3i}$$

$$\frac{2 - 3i}{8 + 3i} = \square$$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Type your answer in the form $a + bi$.)

ID: 10.7.75

87. Simplify by factoring. Assume that all expressions under radicals represent nonnegative numbers.

$$\sqrt{x^{13}}$$

$$\sqrt{x^{13}} = \square$$

(Type an exact answer, using radicals as needed.)

ID: 10.3.39

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Assignment: Chapter 10 Practice

88. Add or subtract as indicated. You will need to simplify terms to identify the like radicals. Assume that all variables represent positive real numbers.

$$\sqrt[3]{16x^4} - \sqrt[3]{54x}$$

$$\sqrt[3]{16x^4} - \sqrt[3]{54x} = \square$$

(Type an exact answer, using radicals as needed.)

ID: 10.4.23

89. Simplify the expression. Include absolute value bars where necessary.

$$\sqrt[6]{y^6}$$

$$\sqrt[6]{y^6} = \square$$

(Simplify your answer.)

ID: 10.1.79

90. Solve the radical equation.

$$\sqrt{13x + 25} = x + 5$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution set is $\{\square\}$.
(Type an exact answer, using radicals as needed. Use a comma to separate answers as needed.)
- B. The solution is the empty set.

ID: 10.6.9

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Assignment: Chapter 10 Practice

91. Complete the table and graph the given function. Identify the function's domain and range.

$$f(x) = \sqrt{x - 6}$$

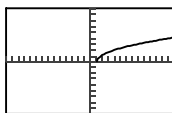
x	$f(x) = \sqrt{x - 6}$
6	?
7	?
42	?
70	?

Complete the table.

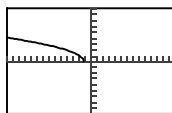
x	$f(x) = \sqrt{x - 6}$
6	<input type="text"/>
7	<input type="text"/>
42	<input type="text"/>
70	<input type="text"/>

Graph the function $f(x) = \sqrt{x - 6}$. The graphs are shown in $[-70, 70, 5]$ by $[-18, 18, 2]$ viewing rectangles. Choose the correct graph below.

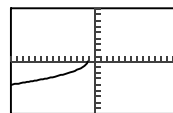
A.



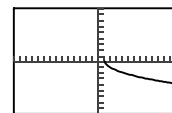
B.



C.



D.



The domain of $f(x)$ is . (Type your answer in interval notation.)

The range of $f(x)$ is . (Type your answer in interval notation.)

ID: 10.1.93

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Assignment: Chapter 10 Practice

1.
$$\begin{array}{r} 5 \\ 2 \\ -3 \\ -4 \end{array}$$

2.
$$\sqrt{30} + \sqrt{102} + \sqrt{95} + \sqrt{323}$$

3.
$$\frac{37\sqrt{5}}{18}$$

4.
$$12|x + 15|$$

5. A, 3

6.
$$-\frac{9}{7} - \frac{10}{7}i$$

7.
$$x - 2\sqrt{7xy} + 7y$$

8. A, 9

9. A, -4

10. 5.2

11.
$$(5xy^2)^{\frac{4}{3}}$$

12. -12

13.
$$\frac{x}{3y^3}$$

14. 7

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

16. $x^5y^3\sqrt[3]{x^2z}$

17. $5i\sqrt{7}$

18. $\frac{\sqrt{13x}}{x}$

19. $2x^6$

20. $3\sqrt{2xy}$

21. 8

22. B

23. $3xy^2\sqrt[5]{3x^2y}$

24. $-7 + 7\sqrt{2}$

25. $50 + 55i$

26. $\sqrt[12]{7x}$

27. $10 - 7\sqrt{x} + x$

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

29. 1316

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30. $2\sqrt[3]{5}$

31. $-\frac{28}{37} + \frac{20}{37}i$

32. B

33. $\sqrt[6]{2^5}$

34. -1

35. 10

36. $7\sqrt{7} + 3\sqrt[3]{x}$

37. 130

38. $\frac{1}{y^{5/24}}$

39. 12

40. $-28 + 8i$

41. $[1, \infty)$
A

42. $-4 + 19i$

43. $\sqrt{33}$

44. A, $\frac{11}{2}$

Student: _____
Date: _____
Time: _____

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45. $5x\sqrt[3]{3} - \sqrt[3]{x^2}$

46. $\frac{4\sqrt[5]{9x^2}}{x}$

47. $\frac{1}{\frac{3}{256^4}} \cdot \frac{1}{64}$

48. $\frac{9}{41} - \frac{1}{41}i$

49. $\frac{(\sqrt[4]{625})^3 + (\sqrt[3]{125})^2}{150}$

50. $\frac{1}{25}$

51. $19^{\frac{1}{3}}$

52. 2

53. $\frac{6\sqrt[3]{121x}}{11x}$

54. $\sqrt[8]{7y}$

55. $2 + 2i$

56. $30\sqrt{5} + 21\sqrt{10}$

57. $-40 + 42i$

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58. $\frac{x^2}{4y^{5/2}}$

59. $\frac{13}{x^{42}}$

60. $2x^3y^2$

61. $\frac{5}{x^6}$

62. $\frac{\sqrt{2mn}}{2m}$

63. $\sqrt[5]{18x^4}$

64. $4i$

65. $-10 - 3i\sqrt{2}$

66. $\sqrt[7]{4xy^6}$

67. \sqrt{x}

68. 1

69. 38.2
Underestimates
2.2
0.8
0.2
B
C

70. xy

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Date: _____
Time: _____

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71. A, 3

72. $2xy^2z^2\sqrt[5]{2x^2y^4z}$

73. A, 21

74. $-25x^3y^3\sqrt{3}$

75. $\frac{36\sqrt{3}}{135}$

76. $28\sqrt[3]{3}$

77. A, -2

78. $\frac{\sqrt[3]{44}}{2}$

79. $x\sqrt{3} + \sqrt{30}$

80. $12x^2\sqrt{2xy}$

81. A, $-\frac{5}{8}$

82. $2\sqrt{10x}$

83. A, 3

84. A, 4

85. $3\sqrt{5}$

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Time: _____

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86. $\frac{7}{73} - \frac{30}{73}i$

87. $x^6\sqrt{x}$

88. $(2x - 3)\sqrt[3]{2x}$

89. $|y|$

90. A, 3, 0

91. 0
1
6
8
A
 $[6, \infty)$
 $[0, \infty)$