

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

1. Find $-\sqrt{\frac{49}{9}}$.

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

A. The answer is $-\frac{7}{3}$.

(Simplify your answer. Type an integer or a fraction.)

B. The square root is not a real number.

2. Find the following.

$$\sqrt{400}$$

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

A. $\sqrt{400} = 20$

(Simplify your answer. Type an integer or a fraction.)

B. The square root is not a real number.

3. Find the principal square root of 0.09.

$$\sqrt{0.09} = 0.3$$

(Simplify your answer.)

4. Use a calculator to approximate the square root.

$$\sqrt{\frac{177}{41}}$$

$$\sqrt{\frac{177}{41}} = 2.078$$

(Round to the nearest thousandth.)

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

5. Find each function value, if it exists.

$$f(t) = \sqrt{t^2 + 1}$$

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

- A. $f(0) = 1$ (Simplify your answer. Type an exact answer, using radicals as needed.)
 B. The square root is not a real number.

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

- A. $f(-1) = \sqrt{2}$
(Simplify your answer. Type an exact answer, using radicals as needed.)
 B. The square root is not a real number.

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

- A. $f(-4) = \sqrt{17}$
(Simplify your answer. Type an exact answer, using radicals as needed.)
 B. The square root is not a real number.

6. Determine the domain of the function.

$$f(x) = \sqrt{5x + 9}$$

- A. $\{x \mid x \geq -\frac{9}{5}\}$
 B. $\{x \mid x \leq -\frac{9}{5}\}$
 C. $\{x \mid x \neq -\frac{9}{5}\}$
 D. $\{x \mid x \text{ is any real number}\}$

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

7. The attendants at a parking lot park cars in temporary spaces before the cars are taken to long-term parking stalls. The number N of such spaces needed is approximated by the function $N(a) = 2.5\sqrt{a}$, where a is the average number of arrivals in peak hours. Find the number of spaces needed when the average number of arrivals is **(a)** 64 and **(b)** 69.

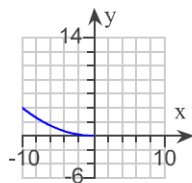
(a) When the average number of arrivals is 64, the number of spaces needed is 20.
(Round to the nearest integer as needed.)

(b) When the average number of arrivals is 69, the number of spaces needed is 21.
(Round to the nearest integer as needed.)

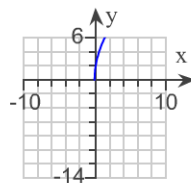
8. Graph the function $f(x) = -5\sqrt{x}$.

Choose the correct graph below.

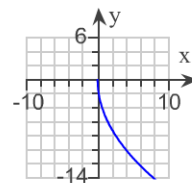
A.



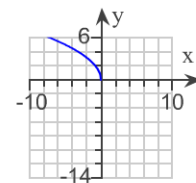
B.



C.



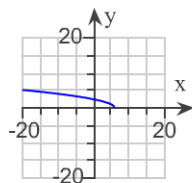
D.



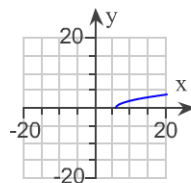
9. Graph the function $f(x) = \sqrt{x+6}$.

Choose the correct graph below.

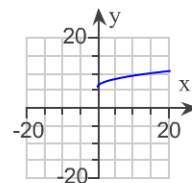
A.



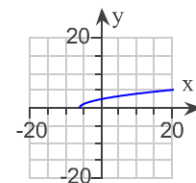
B.



C.



D.



Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

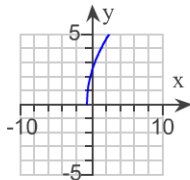
Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

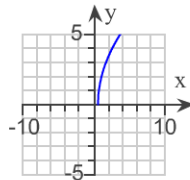
10. Graph the function $g(x) = \sqrt{8x - 5}$.

Choose the correct graph below.

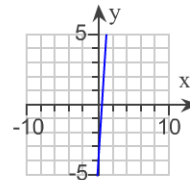
A.



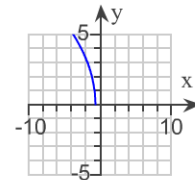
B.



C.



D.



11. Find the following. Assume that x can represent any real number. Use absolute value notation when necessary.

$$\sqrt{49x^2}$$

$$\sqrt{49x^2} = 7|x|$$

(Simplify your answer.)

12. Find the following. Assume that variables can represent any real number.

$$\sqrt{(a+9)^2}$$

$$\sqrt{(a+9)^2} = |a+9|$$

13. Simplify.

$$\sqrt[3]{8}$$

The answer is 2.

14. Simplify.

$$\sqrt[3]{-216x^3}$$

$$\sqrt[3]{-216x^3} = -6x$$

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

15. For the given function, find the following function values.

$$g(t) = \sqrt[3]{t-3}$$

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

- A. $g(11) = 2$ (Round to the nearest tenth as needed.)
 B. The root is not a real number.

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

- A. $g(-340) = -7$ (Round to the nearest tenth as needed.)
 B. The root is not a real number.

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

- A. $g(-1) = -1.6$ (Round to the nearest tenth as needed.)
 B. The root is not a real number.

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

- A. $g(67) = 4$ (Round to the nearest tenth as needed.)
 B. The root is not a real number.

16. Find the following. $\sqrt[4]{10000}$

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

- A. The answer is 10.
 B. The root is not a real number.

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

17. Simplify.

$$\sqrt[3]{-\frac{1}{64}}$$

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

A. $\sqrt[3]{-\frac{1}{64}} = -\frac{1}{4}$ (Simplify your answer. Type a fraction or an integer.)

B. The root is not a real number.

18. Find the following. Assume x can represent any real number.

$$\sqrt[12]{x^{12}}$$

$$\sqrt[12]{x^{12}} = |x|$$

19. Find the following. Assume that letters can represent any real number.

$$\sqrt[5]{(x-8)^5}$$

The answer is $x - 8$.

20. Rewrite without exponents.

$$16^{\frac{1}{4}}$$

$$16^{\frac{1}{4}} = 2$$

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

21. Write an equivalent expression using radical notation.

$$(a^2b^2)^{\frac{1}{3}}$$

$$(a^2b^2)^{\frac{1}{3}} = \sqrt[3]{a^2b^2}$$

(Simplify your answer. Type in radical form.)

22. Write an equivalent expression using radical notation.

$$16^{\frac{3}{4}}$$

$$16^{\frac{3}{4}} = 8$$

(Simplify your answer. Type an integer.)

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

23. Rewrite with a rational exponent.

$$\sqrt[3]{21}$$

$$\sqrt[3]{21} = 21^{\frac{1}{3}}$$

(Simplify your answer.)

24. Rewrite with rational exponents.

$$(\sqrt[7]{4x^6y})^5$$

$$(\sqrt[7]{4x^6y})^5 = (4x^6y)^{\frac{5}{7}}$$

(Simplify your answer.)

25. Simplify the expression.

$$729^{-\frac{5}{3}}$$

Simplify $729^{-\frac{5}{3}}$ completely. Choose the correct answer below.

A. $\frac{1}{(\sqrt[3]{729})^5}$

B. -59049

C. $\frac{1}{59049}$

D. $\sqrt[3]{729^{-5}}$

26. Rewrite the following expression with positive exponents.

$$(46xy)^{-\frac{8}{9}}$$

Choose the correct equivalent expression.

A. $(46xy)^{-\frac{8}{9}} = \frac{1}{(46xy)^{\frac{8}{9}}}$

B. $(46xy)^{-\frac{8}{9}} = \frac{1}{(46xy)^{\frac{9}{8}}}$

C. $(46xy)^{-\frac{8}{9}} = -(46xy)^{\frac{8}{9}}$

D. $(46xy)^{-\frac{8}{9}} = (46xy)^{\frac{9}{8}}$

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

27. Simplify by factoring.

$$\sqrt{24}$$

$$\sqrt{24} = 2\sqrt{6}$$

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

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

$$\sqrt[3]{108x^8}$$

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

A. $\sqrt[3]{108x^8} = 3x^2\sqrt[3]{4x^2}$ (Type an exact answer, using radicals as needed.)

B. The root is not a real number.

29. Simplify by factoring. Assume that all expressions under the radical represent nonnegative numbers.

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

$$\sqrt[4]{32x^4y^6} = 2xy^4\sqrt{2y^2}$$

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

30. Simplify by factoring. Assume that all expressions under the radical represent nonnegative numbers.

$$\sqrt[5]{256x^{12}y^{30}}$$

$$\sqrt[5]{256x^{12}y^{30}} = 2x^2y^6\sqrt[5]{8x^2}$$

(Simplify your answer. Type in radical form.)

31. Multiply.

$$\sqrt[3]{3} \cdot \sqrt[3]{9}$$

$$\sqrt[3]{3} \cdot \sqrt[3]{9} = 3$$

32. Multiply and simplify by factoring.

$$\sqrt{18} \cdot \sqrt{250}$$

The answer is $30\sqrt{5}$.

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

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

33. Multiply and simplify by factoring. Assume that all expressions under radicals represent nonnegative numbers.

$$\sqrt{5b^5} \sqrt{10c^6}$$

$$\sqrt{5b^5} \sqrt{10c^6} = 5b^2c^3\sqrt{2b}$$

(Simplify your answer. Type in radical form.)

34. Multiply and simplify by factoring. Assume that all expressions under radicals represent nonnegative numbers.

$$\sqrt[3]{y^{13}} \sqrt[3]{16y^{14}}$$

$$\sqrt[3]{y^{13}} \sqrt[3]{16y^{14}} = 2y^9\sqrt[3]{2}$$

(Simplify your answer. Type in radical form.)

35. Divide. Then simplify by taking roots, if possible. Assume that all expressions under radicals represent positive numbers.

$$\frac{\sqrt{20xy^3}}{\sqrt{4x}}$$

$$\frac{\sqrt{20xy^3}}{\sqrt{4x}} = y\sqrt{5y}$$

36. Divide. Then simplify by taking roots, if possible. Assume that all expressions under radicals represent positive numbers.

$$\frac{\sqrt[4]{405x^{17}y^{25}}}{\sqrt[4]{5xy^9}}$$

$$\frac{\sqrt[4]{405x^{17}y^{25}}}{\sqrt[4]{5xy^9}} = 3x^4y^4$$

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

37. Simplify by taking roots of the numerator and the denominator.

$$\sqrt[3]{\frac{125}{27}}$$

$$\sqrt[3]{\frac{125}{27}} = \frac{5}{3}$$

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

38. Simplify by taking roots of the numerator and denominator. Assume that all expressions under the radicals represent positive numbers.

$$\sqrt{\frac{49y^5}{x^{10}}}$$

$$\sqrt{\frac{49y^5}{x^{10}}} = \frac{7y^2}{x^5}\sqrt{y}$$

39. Simplify by taking roots of the numerator and the denominator. Assume that all expressions under radicals represent positive numbers.

$$\sqrt[6]{\frac{x^{31}}{y^{30}z^{18}}}$$

$$\sqrt[6]{\frac{x^{31}}{y^{30}z^{18}}} = \frac{x^5}{y^5z^3}\sqrt[6]{x}$$

40. Solve.

$$\sqrt{y+4} - 2 = 6$$

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



A. The solution is $y = 60$.

(Simplify your answer. Type an integer or a fraction. Use a comma to separate answers as needed.)



B. The solution is not a real number.

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

41. Solve.

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

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

- A. The solution is $x = \square$. (Simplify your answer.)
 B. There is no solution.

42. Solve.

$$\sqrt[3]{3x+4} + 5 = 8$$

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

- A. The solution is $x = \frac{23}{3}$.
(Simplify your answer. Type an integer or a fraction. Use a comma to separate answers as needed.)
 B. The solution is not a real number.

43. The formula $r = 2\sqrt{5L}$ can be used to approximate the speed r , in miles per hour, of a car that has left skid marks of length L , in feet. How far will a car skid at 30 mph?

The car will skid feet.

44. Sue, an experienced shipping clerk, can fill a certain order in 9 hours. Felipe, a new clerk, needs 11 hours to do the same job. Working together, how long will it take them to fill the order?

The solution is hours.
(Simplify your answer.)

45. Solve.

$$t^2 + 3t = 0$$

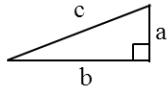
The solution(s) is/are $t = \input{type=text}0, \input{type=text}-3$.
(Simplify your answer. Use a comma to separate answers as needed.)

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

46. In the right triangle, find the length of the side not given. Give an exact answer and an approximation to three decimal places.



$$a = 10, b = 10$$

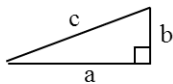
What is the exact value of c ? $\sqrt{200}$

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

What is the value of c approximated to 3 decimal places? 14.142

(Round to the nearest thousandth.)

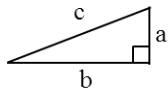
47. Find the length of side a in the right triangle, if $b = 8$ and $c = 10$. (The triangle is not drawn to scale.)



$$a = 6$$

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

48. In the right triangle, find the length of the side not given. Give an exact answer and an approximation to three decimal places.



$$b = 3, c = \sqrt{19}$$

What is the exact value of a ?

$$\sqrt{10}$$

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

What is the approximation to three decimal places for a ?

$$3.162$$

(Round to the nearest thousandth.)

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

49. *Guy wire.* How long is a guy wire reaching from the top of a 18-ft pole to a point on the ground 12 feet from the pole?

What is the exact length?

$\sqrt{468}$ feet

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

What is the length approximated to three decimal places?

21.633 feet

(Round to the nearest thousandth.)

50. During the summer heat, a 10-mi bridge expands 10 ft in length. Assuming the bulge occurs straight up the middle, how high is the bulge?

The exact height of the bulge is

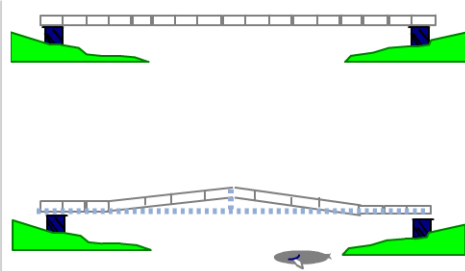
$\sqrt{264025}$ ft.

(Type an exact answer, using radicals as needed. Do not simplify the radical.)

The height of the bulge is

513.834 ft.

(Simplify your answer. Type an integer or a decimal. Round to the nearest thousandth.)



51. The diagonal of a square has length $12\sqrt{2}$ ft. Find the length of the side of the square.

The length of the side of a square is 12 ft.

52. Find all points on the y-axis of a Cartesian coordinate system that are 5 units from the point (3,0).

The point on the positive y-axis is (0,4) .

(Type an ordered pair.)

The point on the negative y-axis is (0, - 4) .

(Type an ordered pair.)

Student: yaser almohaws
Date: 1/1/15
Time: 11:06 AM

Instructor: fahad aljabr
Course: MATH-001: Fundamentals of Exercises
Math 11415
Book: Bittinger: Introductory and
Intermediate Algebra, 4e

Assignment: Week 12 Practice

53. *Speaker Placement.* A stereo receiver is in a corner of an 11-ft by 8-ft room. Speaker wire will run under a rug, diagonally, to a speaker in the far corner. If 3 feet of slack is required on each end, how long a piece of wire should be purchased?

How long should the wire should be? 20 feet
(Round to the nearest foot.)

-
54. Darla is building a new desk. To make sure she had made a square corner, she measures 10ft. from the corner along one edge and 7ft. from the corner along the other edge. How long should the diagonal be between those two points if the corner is a right angle?

Diagonal = 12.207 ft.
(Round to the nearest thousandth.)
