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Date: 2/16/15
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Course: MATH110 A009 Win 15
Book: Tobey: Beginning and Intermediate Algebra, 4e

1. Explain why the cube root of a negative number is a negative number.

Choose the correct answer below.

- ○A. The cube root of a negative number is undefined.
- ○B. The cube root of any number is a negative number.
- ○C. A negative number cubed is always equal to a negative number, so the cube root of a negative number will also always be negative.
- ○D. The cube root of a negative number is equal to both the positive and negative of the solution.

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2. Find the square root.

$\sqrt{64}$

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

- ○A. $\sqrt{64} =$ ■
- ○B. The square root is not a real number.

---

3. Evaluate if possible.

$\sqrt{121} + \sqrt{9}$

Select the correct choice below and fill in any answer boxes in your choice.

- ○A. $\sqrt{121} + \sqrt{9} =$ ■
  (Simplify your answer. Type an integer or decimal rounded to the nearest hundredth as needed.)
- ○B. The square root is not a real number.

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4. Evaluate if possible.

$-\sqrt{\frac{1}{4}}$

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

- ○A. The answer is ■. (Simplify your answer. Type an integer or a fraction.)
- ○B. The square root is not a real number.

---

5. Evaluate if possible.

$\sqrt{-25}$

Select the correct choice below and fill in any answer boxes in your choice.

○A. The answer is ■. (Simplify your answer. Type an integer or a fraction.)

○B. The square root is not a real number.

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6. For the given function, find the indicated function values. Find the domain of the function.

$f(x) = \sqrt{3x+12}$, find $f(0)$, $f(2)$, $f(5)$, $f(-3)$.

$f(0) =$ ☐ (Round to one decimal place as needed.)

$f(2) =$ ☐ (Round to one decimal place as needed.)

$f(5) =$ ☐ (Round to one decimal place as needed.)

$f(-3) =$ ☐ (Round to one decimal place as needed.)

The domain of f(x) is all real numbers x where ☐.
(Type an inequality in terms of x.)

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7. Find the root.

$\sqrt[3]{729}$

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

○A. The cube root is a real number. $\sqrt[3]{729} =$ ■

○B. The cube root is not a real number.

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8. Find the root that is a real number.

$\sqrt[3]{-216}$

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

○A. The cube root is ■.

○B. The cube root is not a real number.

9. Evaluate if possible.

$\sqrt[7]{(15)^7}$

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

○A. The root is not a real number.

○B. The answer is ■.

10. Rewrite with a rational exponent.

$\sqrt[8]{z}$

$\sqrt[8]{z} =$ □

(Simplify your answer.)

11. Assume the variable represents a positive real number. Replace the radical with a rational exponent.

$\sqrt[7]{a^3}$

$\sqrt[7]{a^3}$ expressed with a rational exponent is □.

12. Simplify. Assume that all variables represent positive numbers.

$\sqrt[3]{a^6b^{18}}$

The answer is □.

(Simplify your answer.)

13. Simplify. Assume that the variables represent positive real numbers.

$\sqrt{25x^{30}y^{22}}$

The answer is $\square$.

14. Write the expression in radical form. Assume that the variable represents a positive real number.

$c^{4/3}$

$c^{4/3} = \square$

(Do not simplify.)

15. Write the expression in radical form and then evaluate.

$16^{3/2}$

$16^{3/2} = \square$ (Simplify your answer.)

16. Simplify.

$(16x^{10})^{-1/2}$

$(16x^{10})^{-1/2} = \square$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Use positive exponents only.)

17. Simplify. Assume that the variables represent any positive or negative real number.

$\sqrt[4]{a^{24}b^{8}}$

$\sqrt[4]{a^{24}b^{8}} = \square$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Use positive exponents only.)

18. Simplify. Assume that the variables represent any real number.

$\sqrt{100x^{28}y^4}$

$\sqrt{100x^{28}y^4} = \square$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Use positive exponents only.)

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1. Write in simplest exponent form.

$(-7)(a)(b)(c)(b)(c)(a)(a)$

The expression written in simplest exponent form is $\square$. (Do not factor.)

2. Multiply and simplify.

$h^4 \cdot h^5$

$h^4 \cdot h^5 = \square$

(Simplify your answer. Type exponential notation with positive exponents.)

3. Use the product rule to simplify.

$(-3x^9)(2x^3)$

$(-3x^9)(2x^3) = \square$

(Simplify your answer. Type exponential notation with positive exponents.)

4. Multiply.

$(2x^2)(9x)$

$(2x^2)(9x) = \square$

5. Multiply.

$(6wz^5)(3w^5z^2)$

$(6wz^5)(3w^5z^2) = \square$

(Simplify your answer. Type your answer using exponential notation.)

6. Multiply.

$(9w)(5w^4z)(0)$

$(9w)(5w^4z)(0) = \square$

(Simplify your answer. Type your answer using exponential notation.)

7. Divide. Assume that the variable in the denominator is nonzero.

$$\frac{y^{14}}{y^7}$$

$\frac{y^{14}}{y^7} =$ ☐ (Simplify your answer. Type your answer using exponential notation.)

8. Divide. Assume that all variables in any denominator are nonzero.

$$\frac{b^4}{b^7}$$

$\frac{b^4}{b^7} =$ ☐ (Simplify your answer. Type exponential notation with positive exponents.)

9. Divide. Assume that all variables in the denominator are nonzero.

$$\frac{y^{12}}{2y^4}$$

$\frac{y^{12}}{2y^4} =$ ☐ (Simplify your answer. Type your answer using exponential notation.)

10. Divide. Assume that all variables in the denominator are nonzero.

$$\frac{16a^7b}{-32a^4b^5}$$

$\frac{16a^7b}{-32a^4b^5} =$ ☐

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

11. Simplify.

$$(x^7)^8$$

$(x^7)^8 =$ ☐ (Simplify your answer.)

12. Simplify.

$(3a^5b^4c)^3$

$(3a^5b^4c)^3 =$ ☐ (Simplify your answer.)

13. Simplify.

$(-5s^3)^2$

$(-5s^3)^2 =$ ☐ (Simplify your answer.)

14. Simplify.

$\left(\frac{3x}{7y^3}\right)^2$

$\left(\frac{3x}{7y^3}\right)^2 =$ ☐

15. Simplify.

$(-3x^3y^0z^2)^4$

$(-3x^3y^0z^2)^4 =$ ☐ (Type exponential notation with positive exponents.)

16. Simplify. Assume that variable b is nonzero.

b^{-3}

$b^{-3} =$ ☐ (Use positive exponents only. Simplify your answer.)

17. Simplify. Assume that variable b is nonzero.

$\frac{1}{b^{-6}}$

$\frac{1}{b^{-6}} =$ ☐ (Use positive exponents only. Simplify your answer.)

18. Simplify. Express your answer with positive exponents. Assume that all variables are nonzero.

$$\frac{x^{-5}y^{-8}}{z^{-9}}$$

$\frac{x^{-5}y^{-8}}{z^{-9}} = \square$

19. Simplify. Assume that variable a is nonzero.

$$z^{7}a^{-8}$$

$z^{7}a^{-8} = \square$ (Use positive exponents only. Simplify your answer.)

20. Simplify. Assume that variable x is nonzero.

$$5x^{-7}$$

$5x^{-7} = \square$ (Use positive exponents only. Simplify your answer.)

21. Simplify. Express the answer with positive exponents.

$$\left(\frac{5xy^{-3}}{z^{3}}\right)^{3}$$

$\left(\frac{5xy^{-3}}{z^{3}}\right)^{3} = \square$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Use positive exponents only.)

22. Evaluate $(8)^{2/3}$.

$(8)^{2/3} = \square$ (Type an integer.)

23. Evaluate $(8)^{2/3}$.

$(8)^{2/3} = \square$ (Type an integer.)

24. Simplify the given expression.

$100^{-1/2}$

$100^{-1/2} =$ ☐ (Type an integer or a fraction.)

25. Simplify the following expression and express the answer with positive exponents. Evaluate or simplify the numerical expressions.

$(25)^{-3/2}$

$(25)^{-3/2} =$ ☐ (Type an integer or a simplified fraction.)

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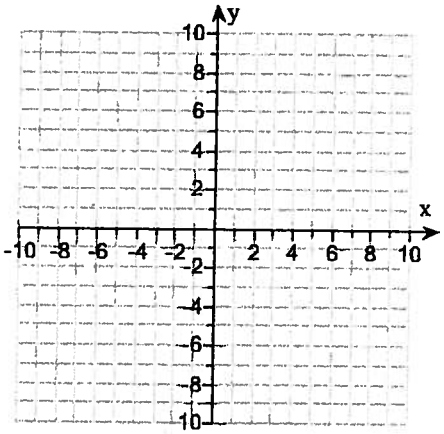
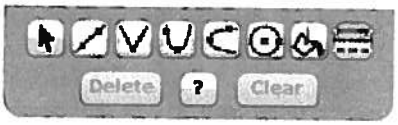
4.4.5. Graph the solution of the following system.

$$y \geq 5x - 1$$
$$x + y \leq 2$$

Use the graphing tool to graph the system.

Click to enlarge graph





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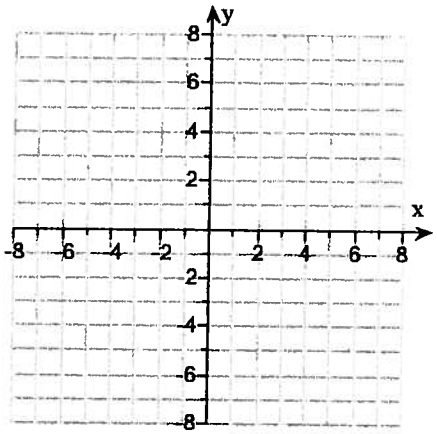
4.4.7. Graph the solution of the following system.

$y \geq -2x$

$y \geq 3x + 1$

Use the graphing tool to graph the system.

Click to enlarge graph



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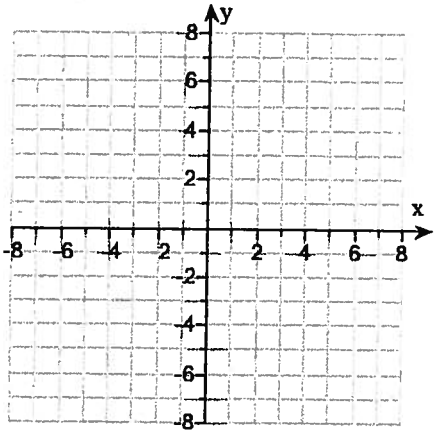
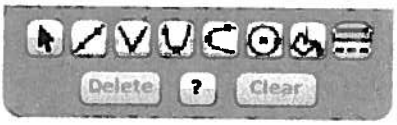
4.4.11. Graph the solution of the following system.

$$x - y \geq -6$$
$$-2x - y \leq 3$$

Use the graphing tool to graph the system.

Click to enlarge graph





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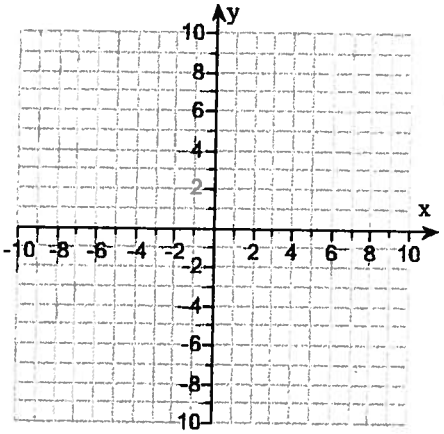
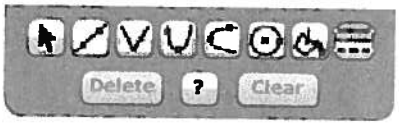
4.4.13. Graph the solution of the following system.

$$x + 4y < 20$$
$$y < 5$$

Use the graphing tool to graph the system.

Click to enlarge graph





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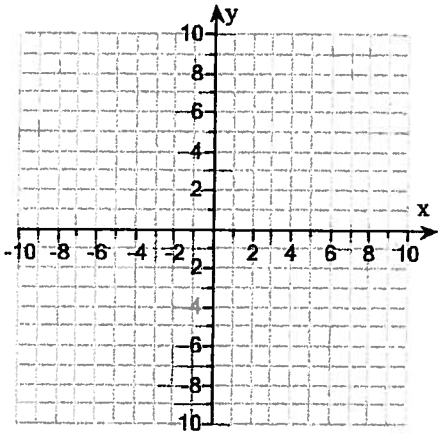
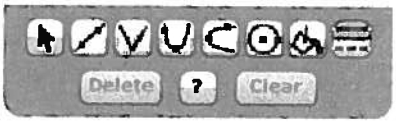
4.4.15. Graph the solution of the following system.

$y < 2$
$x > -1$

Use the graphing tool to graph the system.

Click to enlarge graph





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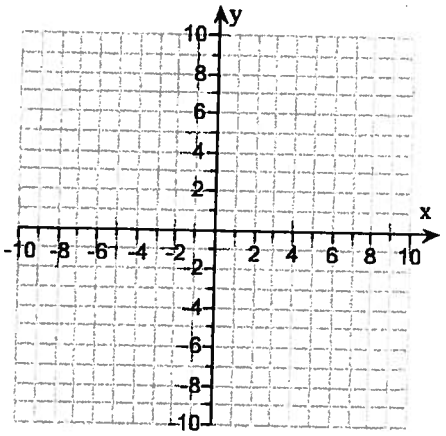
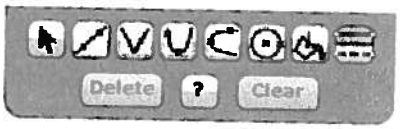
4.4.19. Graph the solution of the following system.

$5x + 6y < 30$
$5x + 6y > -30$

Use the graphing tool to graph the system.

Click to enlarge graph





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