Lorie Hugheas Math 1010 Chapter 10 Test

You have worked really hard. I know you can do this! Good luck on the test.
Double check your answers and be careful when putting your answers on the answer sheet.

Find the root if it is a real number. (2 pts)

1) $-\sqrt{256}$

A) -16 B) -128 C) 16 D) Not a real number

2) $\sqrt{\frac{121}{4}}$

A) 30 B) $\frac{11}{3}$ C) 6 D) $\frac{11}{2}$

3) $\sqrt[4]{625}$

A) 4 B) 5 C) 25 D) 6

Find the decimal approximation for the radical. Round the answer to three decimal places. (2 pts)

4) $\sqrt{837}$

A) 28.936 B) 837.000 C) 28.931 D) 28.928

Simplify the expression involving rational exponents. (3 pts)

5) $125^{-2/3}$

A) $\frac{1}{25}$ B) $-\frac{1}{25}$ C) $\frac{1}{26}$ D) -25

6) $\left(\frac{16}{81}\right)^{-1/2}$

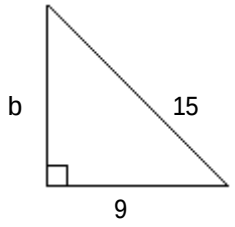
A) $\frac{8}{81}$ B) $\frac{4}{9}$ C) Not a real number D) $\frac{9}{4}$

7) $z^{-2/5} \cdot z^{3/5}$

A) $z^{1/5}$ B) $z^{6/5}$ C) $z^{-1/5}$ D) $z^{5/6}$

Find the unknown length in the right triangle. Simplify the answer if necessary. (3 pts)

8)



A) 12 B) 14 C) $3\sqrt{34}$ D) 6

Find the distance between the points. (4 pts)

9) (-8, 16) and (4, 7)

A) $\sqrt{15}$ B) 15 C) -15 D) 30

In 10 - 17, Express the radical in simplified form. Assume that all variables represent positive real numbers. (3 pts)

10) $\sqrt[3]{64k^{12}}$

A) $-4k^4$ B) $4k^4$ C) $4k^{15}$ D) $64k^4$

11) $-\sqrt{180k^7q^8}$

A) $-6k^3q^4\sqrt{5k}$ B) $6k^7q^8\sqrt{5k}$ C) $6k^3q^4\sqrt{5k}$ D) $-6k^7q^8\sqrt{5}$

12) $\sqrt[3]{\frac{81x^4}{3x}}$

A) $3x\sqrt[3]{x}$ B) $3x\sqrt[3]{3}$ C) $3x$ D) $x\sqrt[3]{27}$

13) $\sqrt{3} \cdot \sqrt[3]{4}$

A) $\sqrt[6]{108}$ B) $\sqrt[6]{432}$ C) $\sqrt[6]{12}$ D) $\sqrt[6]{144}$

14) $6\sqrt{48x^2} - 2\sqrt{27x^2} - \sqrt{3x^2}$

A) $18x\sqrt{3}$ B) $3x\sqrt{21}$ C) $17x\sqrt{3}$ D) $4x\sqrt{21}$

15) $(\sqrt{6x} + 3)(\sqrt{7x} - 4)$

A) $x\sqrt{42} - 12$ B) $x\sqrt{7} - 12$

C) $x\sqrt{42} + \sqrt{7x} - 12$ D) $x\sqrt{42} - 4\sqrt{6x} + 3\sqrt{7x} - 12$

16) $\frac{-3}{\sqrt{15}}$

A) $\frac{\sqrt{15}}{5}$ B) $-\frac{\sqrt{15}}{5}$ C) -3 D) $-\sqrt{3}$

17) $\frac{-30}{\sqrt{12} + \sqrt{2}}$

A) $-3(\sqrt{12} + \sqrt{2})$ B) $-3(\sqrt{12} - \sqrt{2})$ C) $-(\sqrt{12} - \sqrt{2})$ D) $3(\sqrt{12} - \sqrt{2})$

Solve the equation. (5 pts)

18) $\sqrt[3]{7x} = \sqrt[3]{3x - 12}$

A) $\{-27\}$ B) $\{-3\}$ C) $\{3\}$ D) $\varnothing$

19) $\sqrt{x + 7} + 5 = x$

A) {9} B) {9, 18} C) {2, 9} D) {2}

20) $\sqrt{x + 6} + \sqrt{2 - x} = 4$

A) {2, -2} B) {-2} C) $\{\sqrt{31}, -2\}$ D) {∅}

Perform the indicated operation. Give answer in standard form. (4 pts)

21) $(-3 + 4i) - (8 + 2i) - 11i$

A) $-11 - 9i$ B) $-11 - 5i$ C) $-11 + 9i$ D) $11 - 9i$

22) $(3 + 2i)(4 + 5i)$

A) $10i^2 + 23i + 12$ B) $2 + 23i$ C) $2 - 23i$ D) $22 - 7i$

23) $\frac{5 + i}{1 - i}$

A) $2 + 6i$ B) $2 + 2i$ C) $2 + 3i$ D) $3 + 3i$

Simplify. (3 pts)

24) i^{21}

A) -1 B) i C) 1 D) -i

Provide an appropriate response. (2 pt)

25) True or false? $i^3 = -i$

A) True B) False