Math 1201 **Chapter 3 Review** **Name:_____**

10 **Part I: Multiple Choice. Place the correct answer in the corresponding blank at the end of this section.**

1. What is 180 as a product of prime factors?

   (A) $10 \cdot 18$

   (B) $2 \cdot 2 \cdot 5 \cdot 9$

   (C) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 5$

   (D) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 5$

2. What is the greatest common factor of 32 and 72?

   (A) 2

   (B) 4

   (C) 8

   (D) 16

3. What is the least common multiple of 12 and 14?

   (A) 2

   (B) 24

   (C) 84

   (D) 168

4. Determine the edge length of a cube with volume of 64 m^3.

   (A) 2 m

   (B) 4 m

   (C) 8 m

   (D) 32 m

5. Evaluate: $\sqrt[3]{-125}$

(A) -11.2

(B) -5

(C) 5

(D) 11.2

6. Which of the following is irrational? $\sqrt{\frac{36}{81}},\ \sqrt[3]{-27}, \sqrt{24}, \sqrt{25}$

(A) $\sqrt[3]{27}$

(B) $\sqrt{\frac{36}{81}}$

(C) $\sqrt{24}$

(D) $\sqrt{25}$

7. What is $2\sqrt[3]{3}$ written as an entire radical?

(A) $\sqrt[3]{6}$

(B) $\sqrt[3]{12}$

(C) $\sqrt[3]{18}$

(D) $\sqrt[3]{24}$

8. What is $\sqrt{108}$ as a reduced, mixed radical?

(A) $3\sqrt{6}$

(B) $6\sqrt{3}$

(C) $3\sqrt{36}$

(D) $36\sqrt{3}$

9. What is $\left(\frac{2}{5}\right)^{\frac{3}{4}}$ written as a radical?

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

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

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

(D) $\sqrt{\left(\frac{3}{4}\right)^5}$

10. Simplify $\frac{18x^3y^2}{6x^4y}$.

(A) $\frac{3y}{x}$

(B) $3xy$

(C) $\frac{12y}{x}$

(D) $12xy$

Answers to multiple choice.

1.____ **2.____** **3.____** **4.____** **5.____**

6.____ **7.____** **8.____** **9.____** **10.____**

20 **Part II: Constructed Response. Answer each question in the space provided. Show all workings.**

4 11. Determine the greatest common factor of 120 and 180.

4 12. Elijah has voice lessons every 8 days. Jonas has piano lessons every 14 days. If they both have lessons today, how many days will pass before they have lessons on the same day again?

4 13. Simplify: $\frac{(x^{-3}y^{6})(x^{4}y^{6})}{(x^{6}y^{4})^{-2}}$. Write using powers with positive exponents.

4 14. Evaluate:

(A) $32^{\frac{2}{5}}$ (B) $\left(\frac{25}{49}\right)^{-\frac{1}{2}}$

15. Julie completed a math problem and made a mistake. In which step does the first error occur? Rewrite Julie's solution so that it is correct.

The error occurs in step _____

$$\frac{\left(4a^{-3}b^{4}\right)^{-2}}{a^{6}b^{-1}}$$

Correct solution:

$$\text{Step } 1 = \frac{4^{-2}a^{6}b^{-8}}{a^{6}b^{-1}}$$

$$\text{Step } 2 = \frac{a^{0}b^{-9}}{4^{2}}$$

$$\text{Step } 3 = \frac{1}{16b^{9}}$$