Name:

Maintenance Sheet 8.3
Due Friday

1. When the product of 2^2 and 2^x is 128, what is the product of 2^3 and 2^{-x}?

2. Which expression is equivalent to $(5^{-2} \times 5^3)^{-2}$?

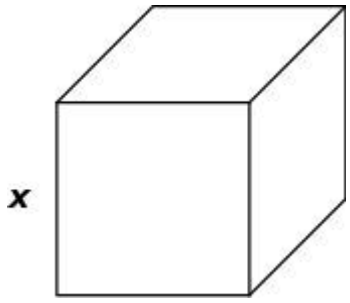
   A) $\frac{1}{100}$

   B) $\frac{1}{25}$

   C) 25

   D) 100

3. The cube shown has an edge length of *x* inches.



The equation $64 = x^3$ can be used to determine the length, in inches, of each edge of the cube. What is the value of *x* ? Explain your answer or show your work.

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4. What is the value of $(4xy^2z^3)^2$?

5. What is another way to express $4^{\frac{1}{2}}$?

A) $\frac{1}{16}$ B) $\frac{16}{4}$ C) $\frac{8}{1}$

D) $\frac{32}{2}$

6. Which statement below is true?

a. $\sqrt{4} = \sqrt[3]{4}$
b. $\sqrt{4} = \sqrt[3]{27}$
c. $\sqrt{16} = \sqrt[3]{27}$
d. $\sqrt{16} = \sqrt[3]{64}$

7. Joanne has $2a^3$ number of animals. Ronnie has $3a^3$ number of animals. Odessa hasa^4 number of animals. How many animals do Joanne, Ronnie, and Odessa have altogether?

A) $5a^{10}$

B) $6a^{10}$

C) $5a^3 + a^4$

D) $6a^3 + a^4$

8. A square-shaped playground has an area of 290 ft^2. Approximately, how long is one side of the playground?

A) 12 ft B) 17 ft

C) 36 ft D) 73 ft

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9. Which of the following best represents $\sqrt{39}$? A number between —

A) 3 and 4

B) 6 and 7

C) 7 and 8

D) 8 and 10

10. Which expression is equivalent to $6^5 \cdot 6^{-5} \cdot \left(\frac{4^9}{4^7}\right)^{-3}$?

A) $\frac{1}{4}$ B) $\frac{1}{4^6}$ C) $\frac{6}{4^{20}}$ D) $\frac{6}{4^{34}}$

11. A warehouse stores goods in cube-shaped boxes, each with a volume of x^3 cubic feet. If the volume of a single box is 216 cubic centimeters, what is the value of *x*? Explain your answer.

12. Which is equivalent to p^6p^2?

A) p^8

B) $2p^8$

C) p^{10}

D) p^{12}

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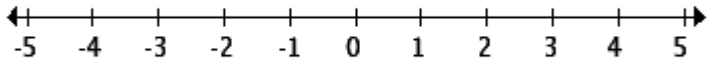
13. Which is equivalent to the expression shown below? $3^2 \cdot 3^{-3}$

A) -3 B) -1 C) $\frac{1}{769}$ D) $\frac{1}{3}$

14. What is the value of *z* in the equation $z^3 = \frac{8}{64}$?

15. Plot the $\sqrt{22}$ on the number line



16. Classify the number $\frac{\sqrt{16}}{2}$ as rational or irrational.

17. Which of the following best represents $\sqrt{39}$? A number between __ and __. Be sure to show your work below.

18. Which of the following is an irrational number?

e. $\sqrt{5}$
f. $\frac{300}{2}$
g. $0.\overline{6}$
h. $\sqrt{144}$