Name _____ Time _____

Power-Up Test 21

Math Course 3

Facts Metric Measurement Facts: complete each equivalent measure.

Linear Measure:

1. 1 centimeter = _____ milimeters
2. 1 meter = _____ centimeters
3. 1 meter = _____ millimeters
4. 1 kilometer = _____ meters

Area and Volume:

5. 1 meter^2 = _____ centimeters^2
6. 1 kilometer^2 = _____ meters^2
7. 1 meter^3 = _____ centimeters^3

Mass:

8. 1 gram = _____ milligrams
9. 1 kilogram = _____ grams
10. 1 metric ton = _____ kilograms

Capacity:

11. 1 liter = _____ milliliters (mL).

One milliliter of water has a volume of
12. _____ and a mass of 13._____.

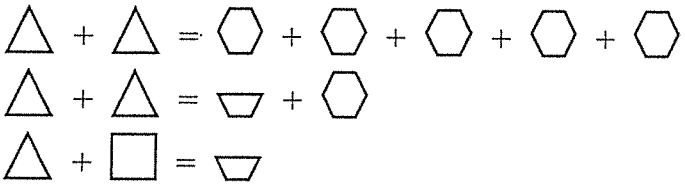
One thousand cm^3 of water fills a
14. _____-liter container and has a mass of
15. _____kilogram.

Temperature:

16. Water freezes at ____°C.
17. Water boils at ____°C.
18. Normal body temperature is ____°C.

Problem Solving Answer the question below.

Problem: The triangle, square, trapezoid, and hexagon pattern blocks have each been assigned a whole number value between 1 and 9. Using the equation models below, what is the value of a square?



Understand

What information am I given?
What am I asked to find or do?

Plan

How can I use the information I am given?
Which strategy should I try?

Solve

Did I follow the plan?
Did I show my work?
Did I write the answer?

Check

Did I use the correct information?
Did I do what was asked?
Is my answer reasonable?

Name _____

Score _____

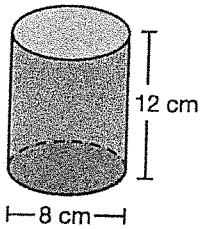
Cumulative Test 21A

Math Course 3

*Also take **Power-Up Test 21***

(105) **1.** On her first three quizzes Jenna averaged 8 correct answers. On the next two quizzes she averaged 9 correct answers. What decimal number shows Jenna's average score on all five quizzes?

For questions 2–4, refer to the cylinder.

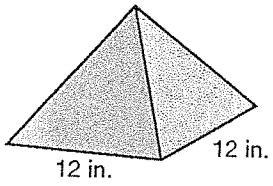


(85) **2.** A paper label covers the lateral surface area of this cylindrical can. What is the area of the label?

(76) **3.** What is the volume of the can?

(104) **4.** What is the capacity of the can in milliliters?

For questions 5–8, refer to the pyramid that is 8 inches high.



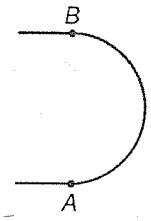
(86) **5.** What is the volume of the pyramid?

(95) **6.** Calculate the slant height of the pyramid.

(100) **7.** Using five pieces of cardboard, Sergio built this model of a pyramid. How many square inches is the total surface area of the pyramid?

(106) **8.** Sergio builds another pyramid 10 times as large. The surface area of the larger pyramid is how many times as large?

9. (81) How long is the curve of the track from A to B if a segment from A to B is 60 m long? Use 3.14 for π and express your answer to the nearest whole meter.



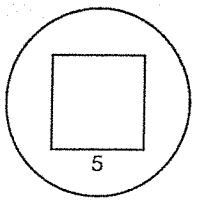
10. (99) The factory has a rush order. Two machines can complete the order in 48 hours. How many machines are needed to complete the order in 8 hours?

11. (Inv. 10) A \$10,000 investment grows in value at a compound rate of 10% per year. What is the value of the investment in three full years?

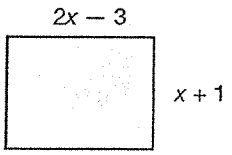
12. (83) Ten slips of paper numbered 1 through 10 are placed in a hat. Two slips are drawn from the hat without replacement. What is the probability that both numbers drawn are less than 4?

13. (104) A 2-liter bottle of water has a mass of about how many kilograms?

14. (101) The diameter of the circle is 10 units. The side length of the square is 5 units. What is the probability that an object that falls within the circle also lands in the square? Express your answer in terms of π.



15. (92) Write an algebraic expression for the perimeter of this rectangle.



16. (Inv. 2, 96) A rectangle has vertices at (0, −2), (2, 0), (−1, 3), and (−3, 1). What is the area of the rectangle?

For questions 17 and 18, solve for x.

17. (93) $x^2 - 9 = 16$

18. (21, 50) $3x + 2(x - 1) = x + 10$

For questions 19 and 20, simplify the expression.

19. (92) $(x + 5)(x + 5)$

20. (78) $2\sqrt{8} \cdot \sqrt{10}$