Grade 5 Unit 8 worksheet: Volume of a box

Name _____ Date _____ Period _____

1. Each box is given as length by width by height. Find its volume with $V = l \times w \times h$. Write the unit with your answer.

(a) 7 cm by 3 cm by 4 cm

(b) 9 ft by 5 ft by 2 ft

(c) 15 m by 4 m by 3 m

(d) 13 in by 8 in by 5 in

2. Each line multiplies the three edges of a box to get its volume. Find the number that goes in the box.

(a) 3 × 5 × ☐ = 105

(b) ☐ × 8 × 2 = 144

(c) ☐ × 9 × 6 = 432

(d) 12 × ☐ × 5 = 360

3. Each list gives the three edges of a box in centimeters. Find each volume without a long multiplication: first multiply the two edges whose product is a round number. Show which two you chose.

(a) 2, 19, 5

(b) 5, 18, 20

(c) 40, 13, 5

(d) 15, 7, 20

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4. Ethan's window box for flowers is 12 inches long and 4 inches wide inside. When it is full, it holds 432 cubic inches of soil. How deep is the window box inside?

5. A bookshelf cubby is 2 feet wide, 15 inches tall and 12 inches deep inside. Jack says its volume is 2 × 15 × 12 = 360 cubic inches.

(a) What did Jack do wrong?

(b) Find the volume of the cubby in cubic inches.

6. Mia has a gift box 8 inches long, 6 inches wide and 4 inches tall. She wants a flatter box that holds the same amount. The new box is also 8 inches long, but it is only 2 inches tall. How wide must the new box be?

7. (a) Omar says: "Two boxes have the same base area. The taller box holds more." Is he right? Explain using $V = B \times h$.

(b) Sarah says: "Of any two boxes, the taller box holds more." Is she right? Give an example to show your answer.

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