KEY

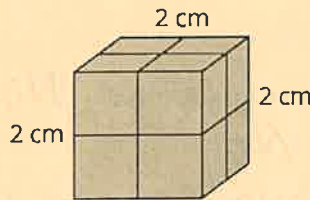NAME   DATE   PERIOD   /21

Unit 1, Lesson 17
Practice Problems

1. What is the volume of this cube?
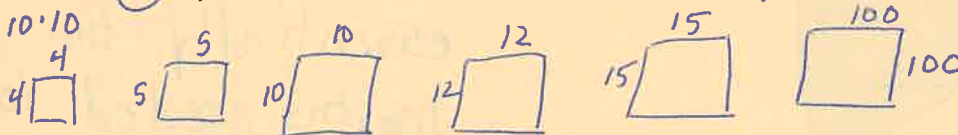
2 cm
2 cm
2 cm

$2 \cdot 2 \cdot 2 = 8 cm^3$
2^3

/1

2. a. Decide if each number on the list is a perfect square.

A. 16 4·4   E. 125

B. 20   F. 144 12·12

C. 25 5·5   G. 225   15·15

D. 100   H. 10,000   100·100

10·10
4⬜ (4)
5⬜ (5)
10⬜ (10)
12⬜ (12)
15⬜ (15)
100⬜ 100

b. Write a sentence that explains your reasoning. if a number times itself is a number it is a perfect square

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3. a. Decide if each number on the list is a perfect cube.

A. 1   1·1·1

B. 3   No

C. 8   2·2·2

D. 9   No

E. 27 3·3·3

F. 64 4·4·4

G. 100 No

H. 125 5·5·5

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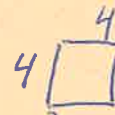
b. Explain what a perfect cube is. A number multiplied by itself 3 times makes a perfect cube   x·x·x

4. a. A square has side length 4 cm. What is its area? $16 cm^2$

4⬜ (4) ?

b. The area of a square is 49 m². What is its side length? 7 m $49m^2$?

c. A cube has edge length 3 in. What is its volume?

3⬛3 $3 \cdot 3 \cdot 3 = 27 un^3$

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(handwritten top) $2(3\cdot2)=12$ | $2(1\cdot3)=6$ | $2(2\cdot1)=4$ → $22\,un^2$

(handwritten top right) $SA = 4(6)+2(1)$, $24+2=26\,un^2$

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5. Prism A and Prism B are rectangular prisms. Prism A is 3 inches by 2 inches by 1 inch. Prism B is 1 inch by 1 inch by 6 inches.

   Select **all** statements that are true about the two prisms.

   (handwritten) A   B
   Volume $3\cdot2\cdot1 = 6\,un^3$ $1\cdot1\cdot6 = 6\,un^3$

   A. They have the same volume. *(circled)*

   B. They have the same number of faces. *(circled)*

   C. More inch cubes can be packed into Prism A than into Prism B.   *No – same volume*

   D. The two prisms have the same surface area.   *No*

   E. The surface area of Prism B is greater than that of Prism A. *(circled)* $26\,un^2 > 22\,un^2$

   /5

6. a. What polyhedron can be assembled from this net?   *Triangular Prism*
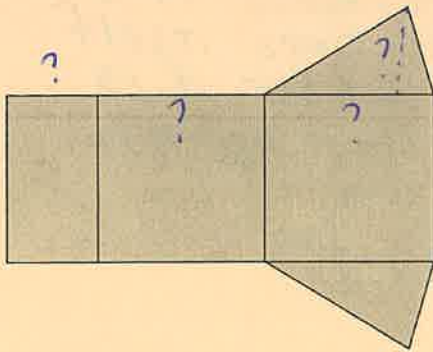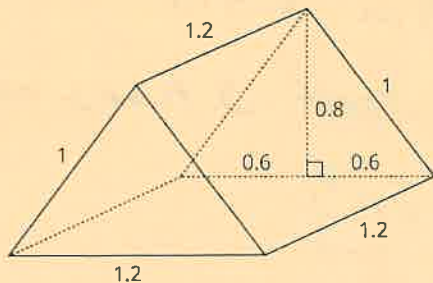
   b. What information would you need to find its surface area? Be specific, and label the diagram as needed.

   See ? at left – essentially the lengths needed to find the areas of the rectangles and △.

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7. Find the surface area of this triangular prism. All measurements are in meters.

   (handwritten)
   $2\ \triangle = 2(1.2\cdot.8 \div 2) = \underline{.96\,m^2}$ ⟵ oops!
   $2\ \square = 2(1\cdot1.2) = \underline{2.4\,m^2}$
   $1\ \square = 1.2\cdot1.2 = \underline{1.44\,m^2}$
   ~~15.44 m²~~
   $4.8\,m^2$