Daily Homework Check 3-2
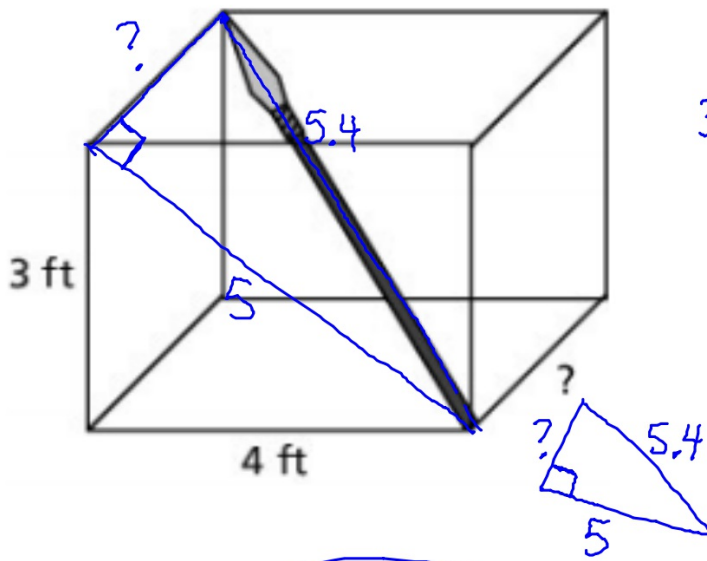1) PT WP # 6
2) PT WP # 10

Pythagorean Theorem 2-D and 3-D Figures

DRAW <u>ALL</u> PICTURES AND SHOW<u>ALL</u> WORK

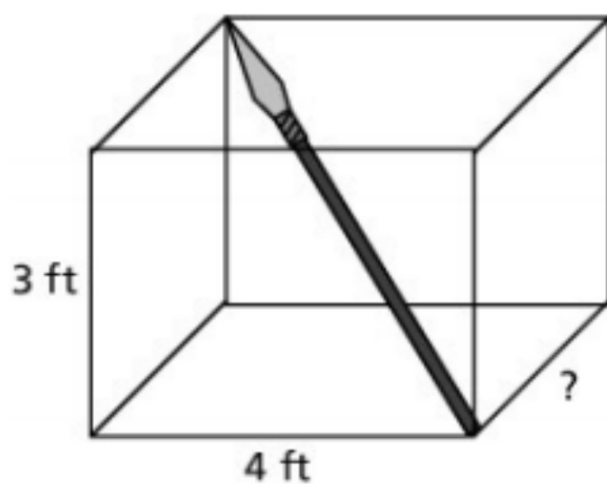**1.** A spear of 5.4 ft is inserted in a wooden box as shown.

What is the approximate width of the base?

A 7 ft

B. 5 ft

C. 3 ft

D. 2 ft

$$a^2 + b^2 = c^2$$
$$3^2 + 4^2 = c^2$$
$$9 + 16 = c^2$$
$$25 = c^2$$
$$\sqrt{25} = \sqrt{c^2}$$
$$5 = c$$

$$a^2 + b^2 = c^2$$
$$a^2 + 5^2 = 5.4^2$$
$$a^2 + 25 = 29.16$$
$$a^2 = 4.16$$
$$\sqrt{a^2} = \sqrt{4.16}$$
$$a = 2.03$$
$$a \approx 2$$

1. A spear of 5.4 ft is inserted in a wooden box as shown.

3 ft

4 ft

?

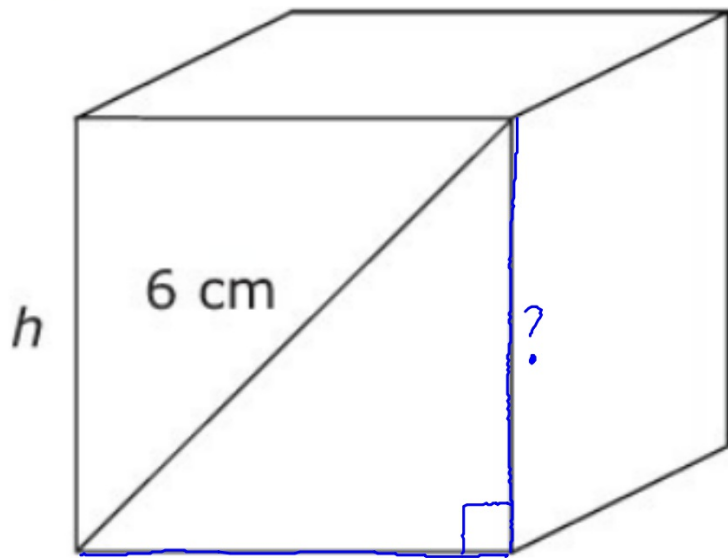What is the approximate width of the base?

A. 7 ft

B. 5 ft

C. 3 ft

D. 2 ft

2.

The diagonal of the face of a cube is 6 centimeters (cm).

6 cm

h

?

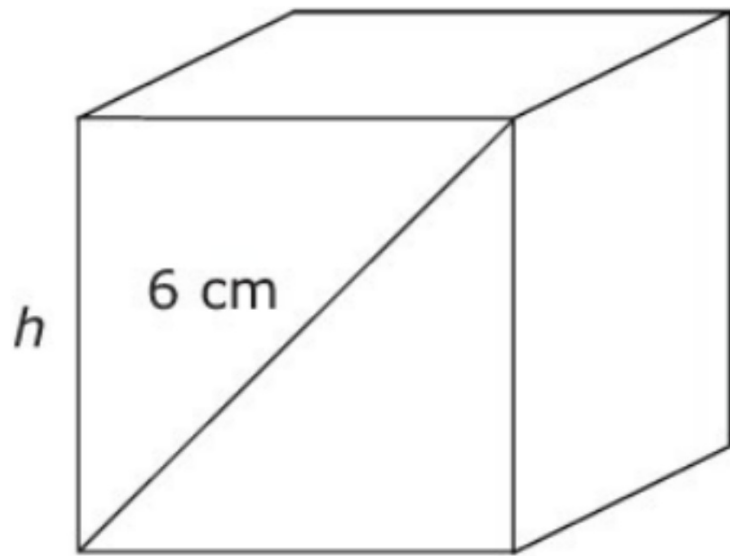What is the height, h, of the cube?

A $\sqrt{6}$ cm

B.   3 cm

C. $\sqrt{18}$ cm

D.   6 cm

$a^2 + b^2 = c^2$
$a^2 + a^2 = 6^2$
$2a^2 = 36$
$a^2 = 18$
$\sqrt{a^2} = \sqrt{18}$ $a = \sqrt{18}$

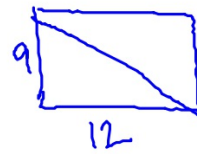**2.** The diagonal of the face of a cube is 6 centimeters (cm).

h 6 cm

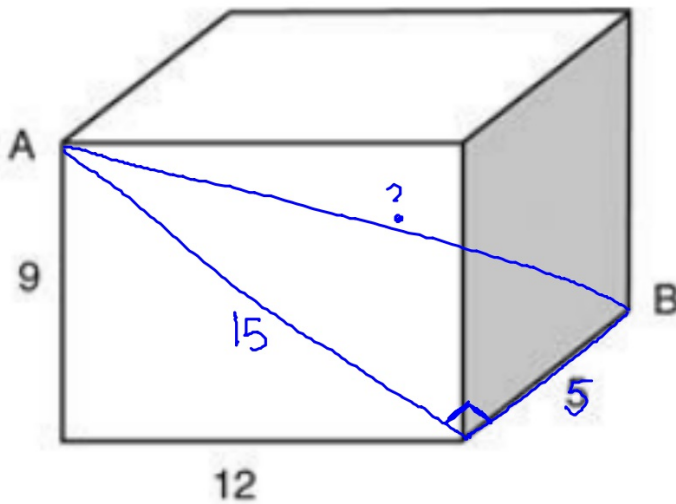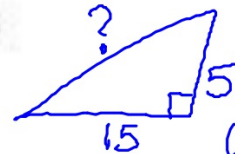What is the height, h, of the cube?

A $\sqrt{6}$cm

B.   3 cm

C. $\sqrt{18}$cm

D.   6 cm

3.

The figure is a rectangular prism.

Note: The figure is not drawn to scale.

What is the length of the diagonal from Point *A* to Point *B*?

A. 13

B. 15

C. $5\sqrt{10}$

D. $12\sqrt{10}$

Handwritten work:

$a^2 + b^2 = c^2$
$9^2 + 12^2 = c^2$
$81 + 144 = c^2$
$225 = c^2$
$\sqrt{225} = \sqrt{c^2}$
$15 = c$

$a^2 + b^2 = c^2$
$5^2 + 15^2 = c^2$
$25 + 225 = c^2$
$250 = c^2$
$\sqrt{250} = \sqrt{c^2}$
$\sqrt{250} = c$
$\sqrt{25 \cdot 10} = c$
$\sqrt{25} \cdot \sqrt{10} = c$
$5\sqrt{10} = c$

3.

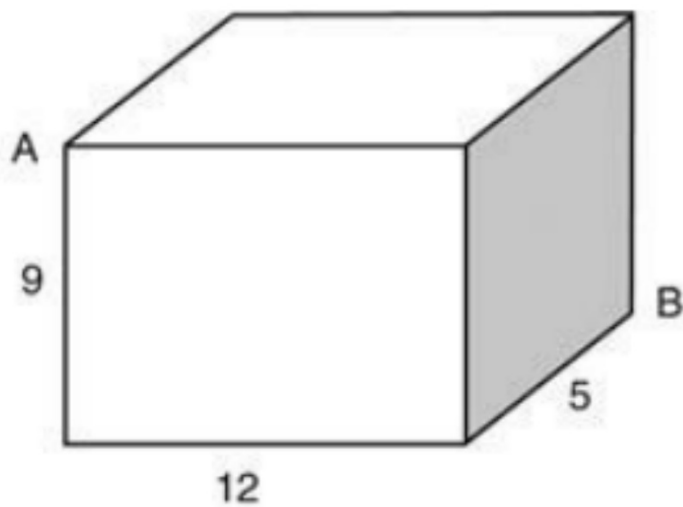**The figure is a rectangular prism.**

A
9
B
5
12

Note: The figure is not drawn to scale.

What is the length of the diagonal from Point _A_ to Point _B_?

A. 13

B. 15
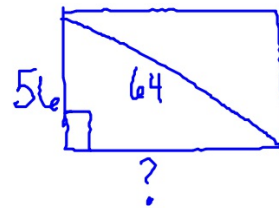
C. $5\sqrt{10}$

D. $12\sqrt{10}$

4.

Linda bought a rectangular-shaped table.

- The top of the table has a width of 56 inches.
- The diagonal of the top of the table was 64 inches.

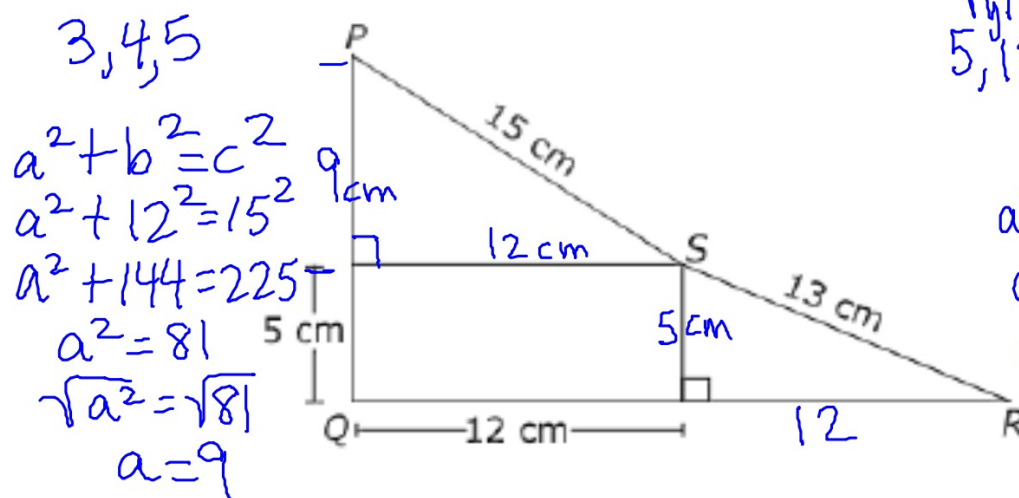What is the **approximate** area of the top of the table?

A 1,736 square inches

B. 1,984 square inches

C. 3,584 square inches

D. 4,762 square inches

$A = lw$

$A = 31(56)$

$A = 1736$

$a^2 + b^2 = c^2$

$a^2 + 56^2 = 64^2$

$a^2 + 3136 = 4096$

$a^2 = 960$

$\sqrt{a^2} = \sqrt{960}$

$a = 30.98$

$a \approx 31$

5.

Figure *PQRS* below is made up of a rectangle and two right triangles.

$$3,4,5$$

$$Pythagorean. Triple$$
$$5,12,13$$

$$a^2+b^2=c^2$$
$$a^2+12^2=15^2$$
$$a^2+144=225$$
$$a^2=81$$
$$\sqrt{a^2}=\sqrt{81}$$
$$a=9$$

$$a^2+b^2=c^2$$
$$a^2+5^2=13^2$$
$$a^2+25=169$$
$$a^2=144$$
$$\sqrt{a^2}=\sqrt{144}$$
$$a=12$$

P

15 cm

9 cm

12 cm   S

5 cm   5 cm   13 cm

Q ⊢——— -12 cm ——— ⊣   12   R

What is the perimeter of figure *PQRS*?

$$14+28+24$$

A 78 cm

B. 66 cm

C. 62 cm

D. 45 cm