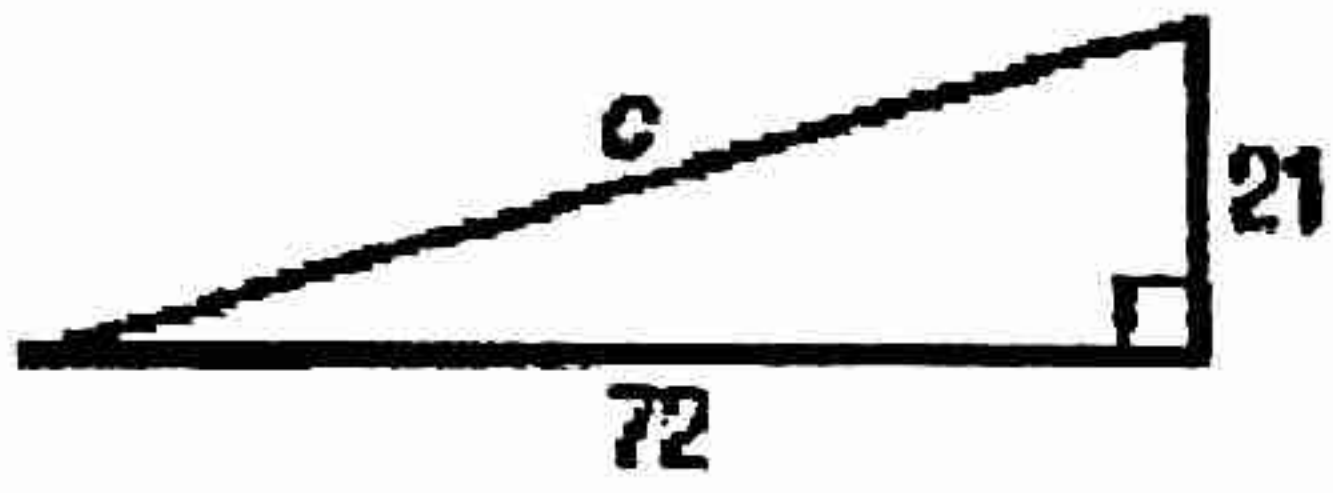


Intermediate Algebra
Pythagorean Theorem Homework

Name: _____
Date: _____ Block: _____

1.



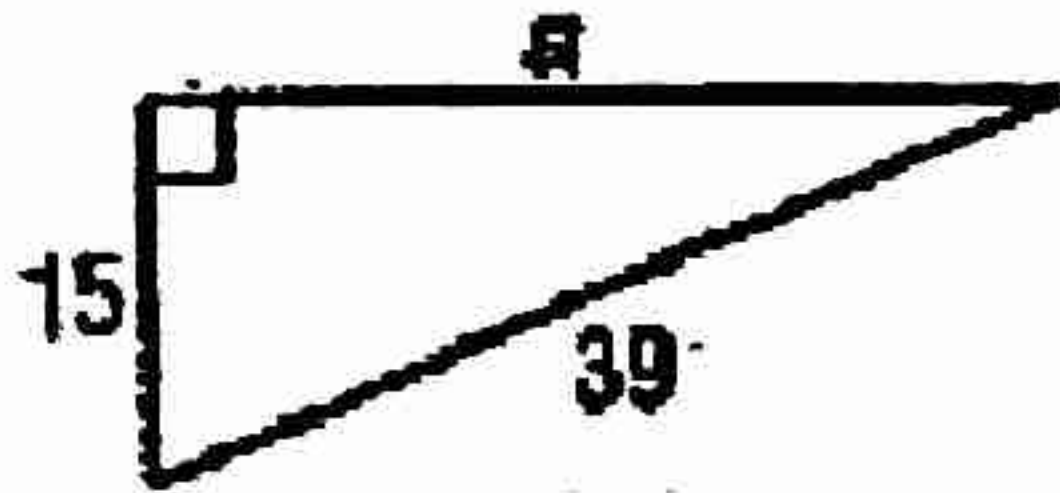
$$72^2 + 21^2 = c^2$$

$$5625 = c^2$$

$$\boxed{75 = c}$$

units

2.



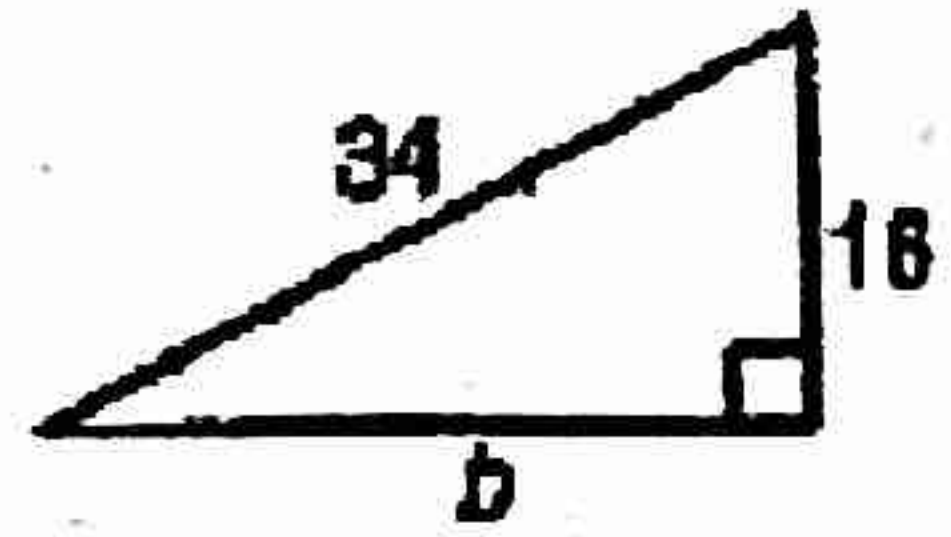
$$a^2 + 15^2 = 39^2$$

$$a^2 + 225 = 1521$$

$$a^2 = 1296$$

$$\boxed{a = 36 \text{ units}}$$

3.



$$b^2 + 18^2 = 34^2$$

$$b^2 + 288 = 1156$$

$$b^2 = 868$$

$$\boxed{b = 30 \text{ units}}$$

If c is the measure of the hypotenuse of a right triangle, find each missing measure. Leave all radicals in simplest form.

4. $a = 21, b = 28, c = ?$

$$21^2 + 28^2 = c^2$$

$$1225 = c^2$$

$$\boxed{35 = c}$$

units

5. $a = 6, c = 10, b = ?$

$$6^2 + b^2 = 10^2$$

$$36 + b^2 = 100$$

$$b^2 = 64$$

$$\boxed{b = 8}$$

units

6. $b = 6, c = 12, a = ?$

$$a^2 + 6^2 = 12^2$$

$$a^2 + 36 = 144$$

$$a^2 = 108$$

$$\boxed{a = 6\sqrt{3}}$$

units

$$\begin{array}{r} 108 \\ \underline{36} \\ 3 \end{array}$$

7. $a = 19, b = \sqrt{39}, c = ?$

$$19^2 + 39 = c^2$$

$$400 = c^2$$

$$\boxed{20 = c}$$

units

8. $a = \sqrt{12}, b = 6, c = ?$

$$12 + 36 = c^2$$

$$48 = c^2$$

$$\begin{array}{r} 48 \\ \underline{12} \\ 16 \end{array}$$

$$\boxed{4\sqrt{3} = c}$$

units

9. $c = \sqrt{130}, a = 7, b = ?$

$$49 + b^2 = 130$$

$$b^2 = 81$$

$$\boxed{b = 9}$$

units

Determine whether the following side measure form right triangles. Justify your answer.

10. 7, 24, 25

Yes

11. 15, 30, 34

$$1125 = 1156$$

No

12. 16, 28, 32

$$1040 = 1024$$

No

13. 18, 24, 30

$$900 = 900$$

Yes

14. 15, 36, 39

$$1521 = 1521$$

Yes

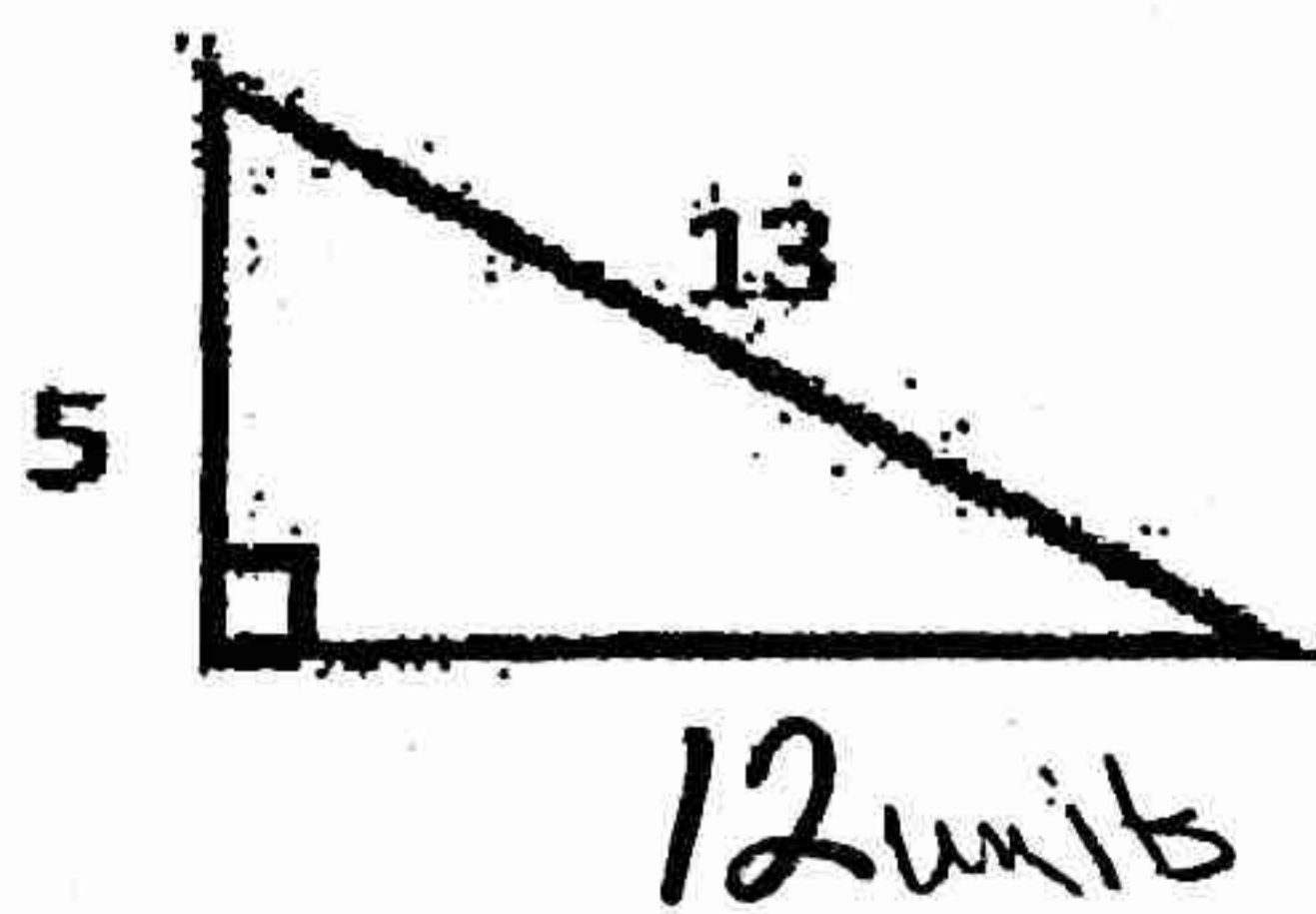
15. 5, 7, $\sqrt{74}$

$$74 = 74$$

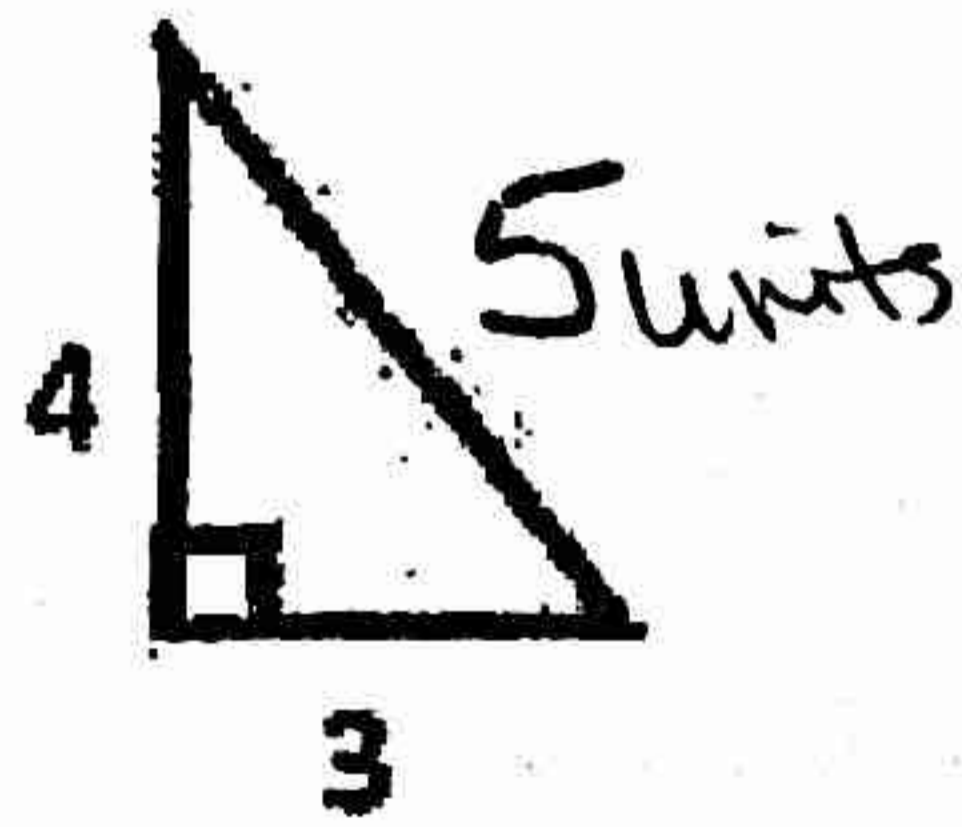
Yes

Find the length of each missing side. Apply your knowledge of Pythagorean Triples first. If you determine the triple then write it down.

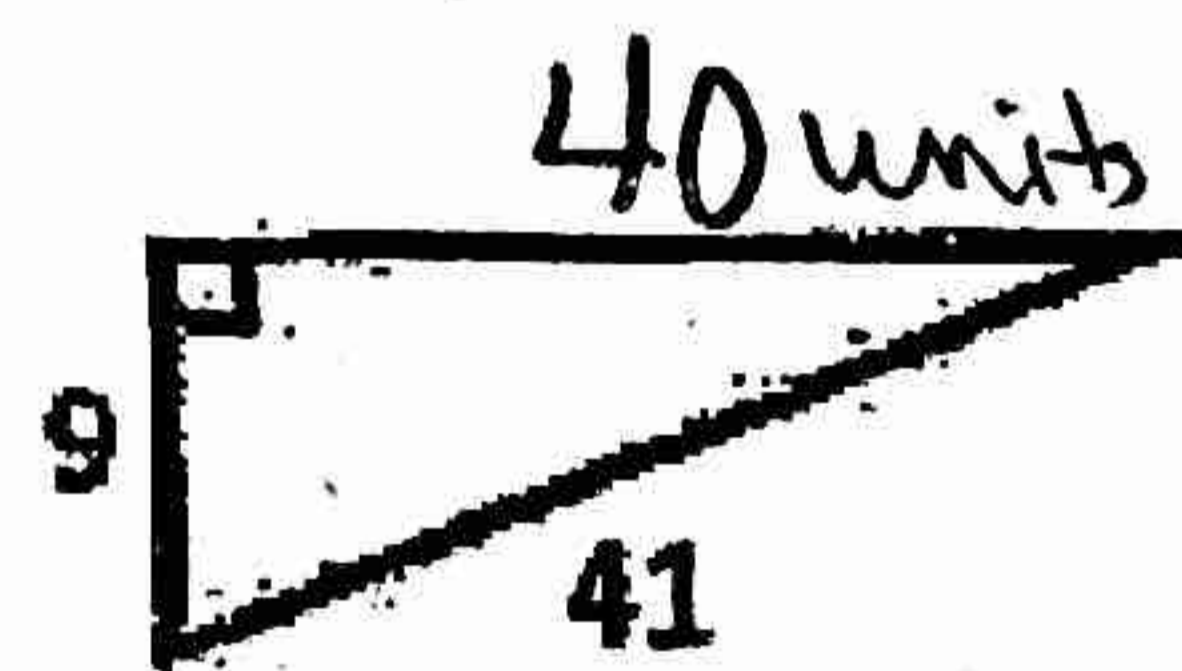
16.



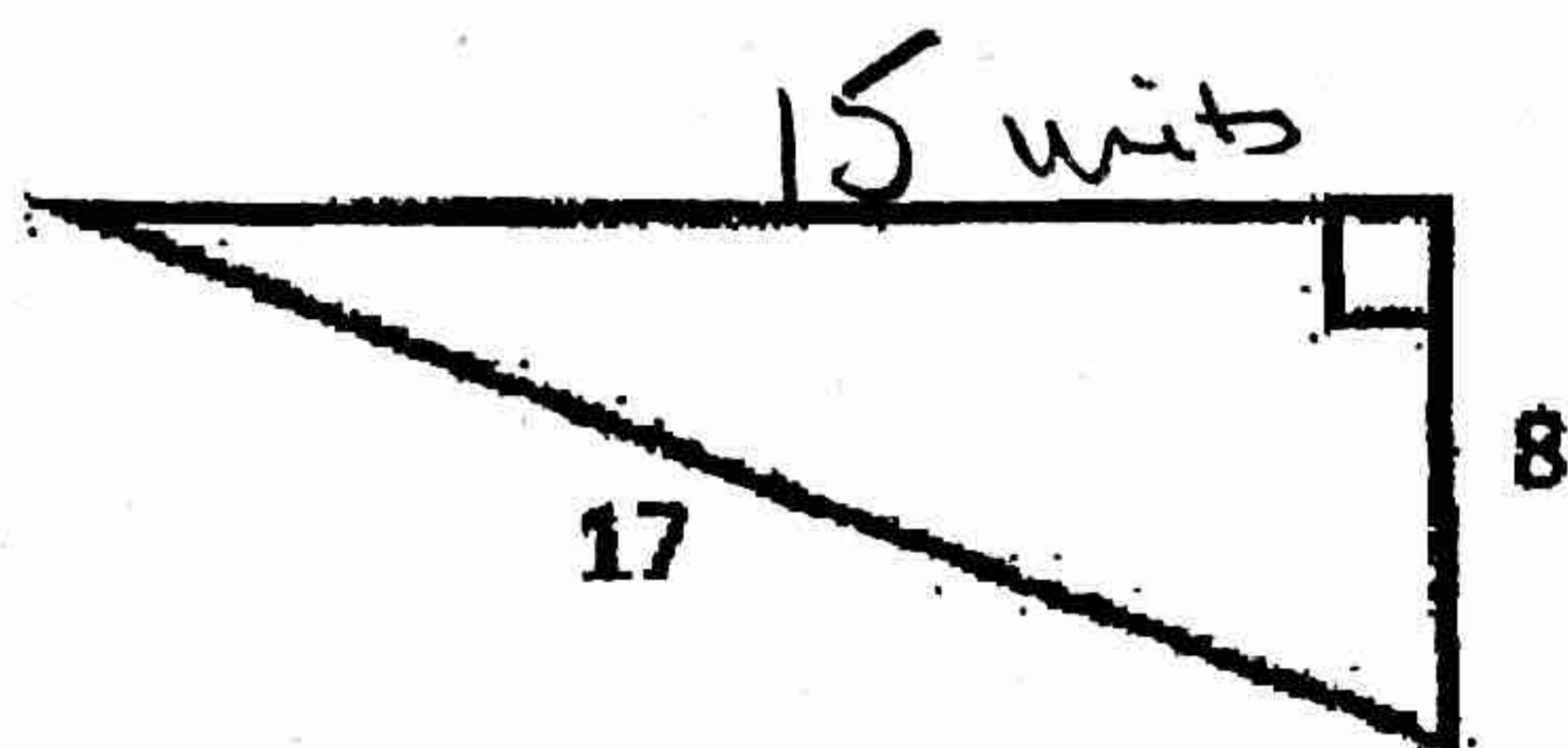
17.



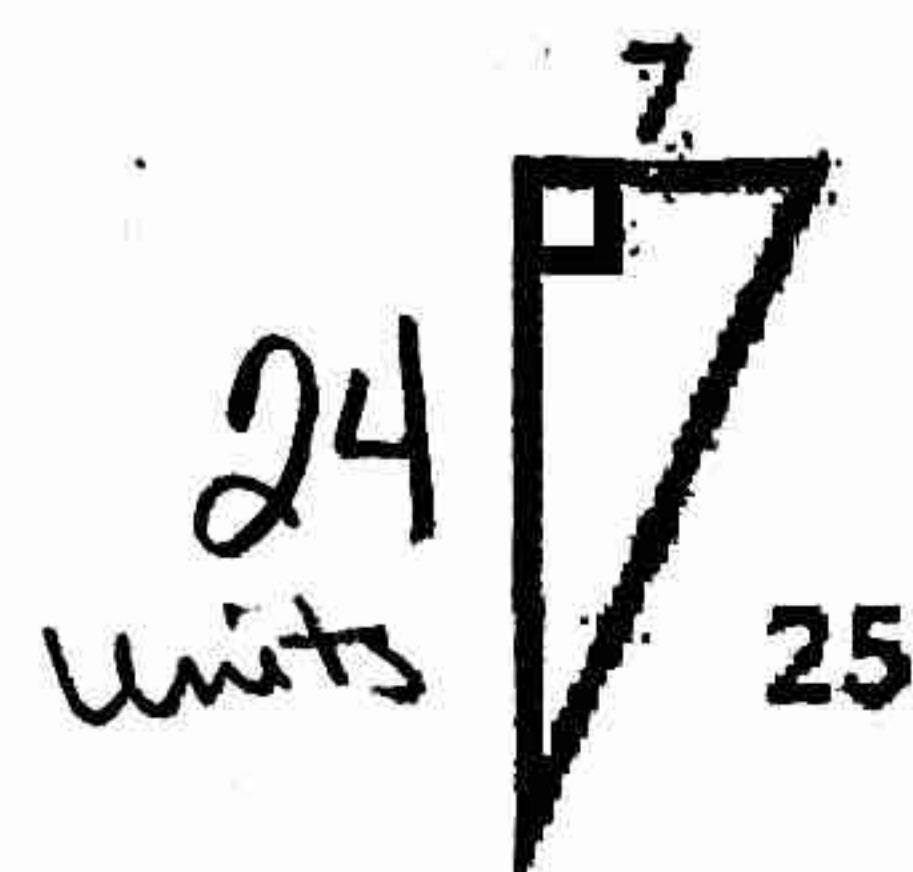
18.



19.

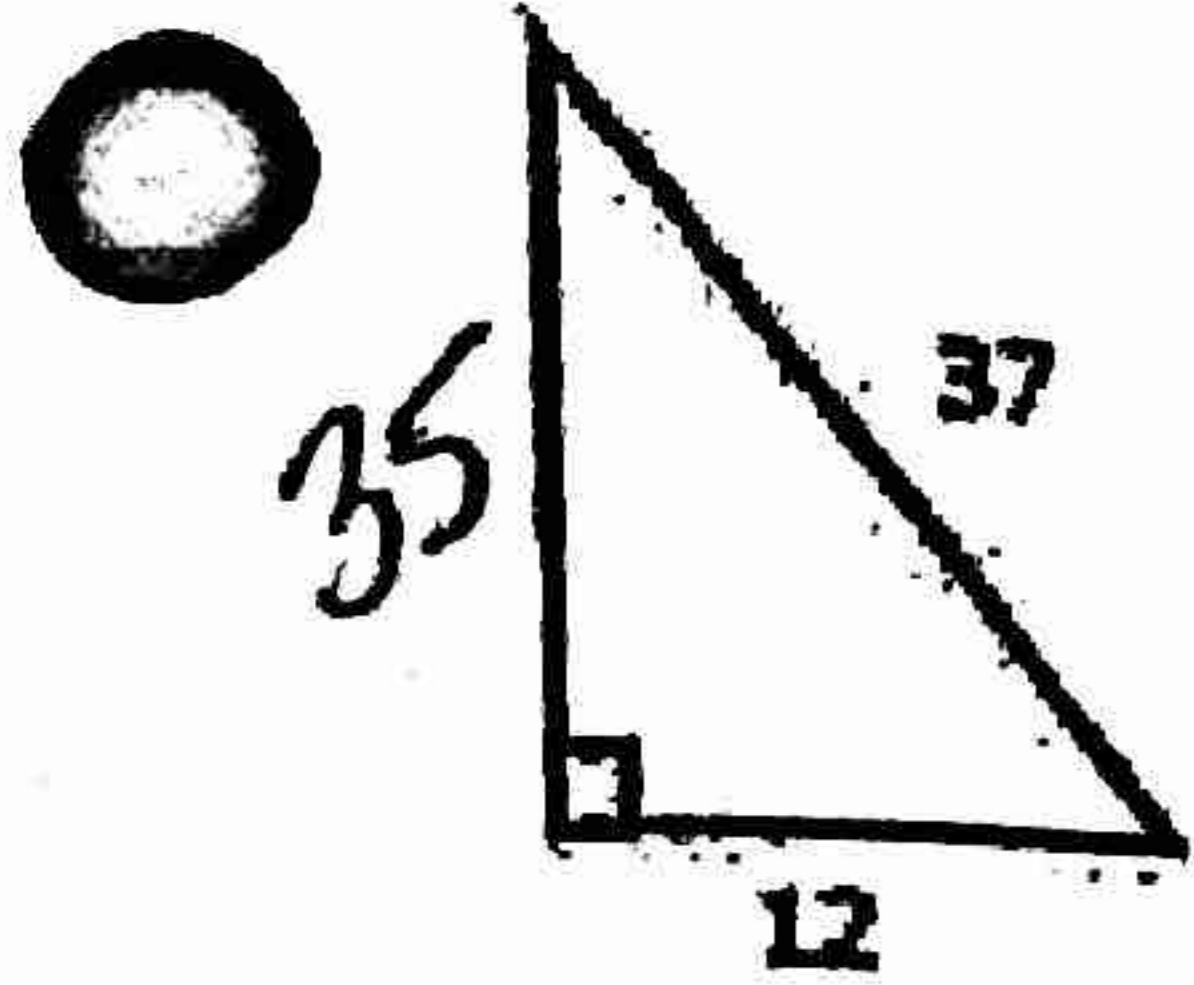


20.



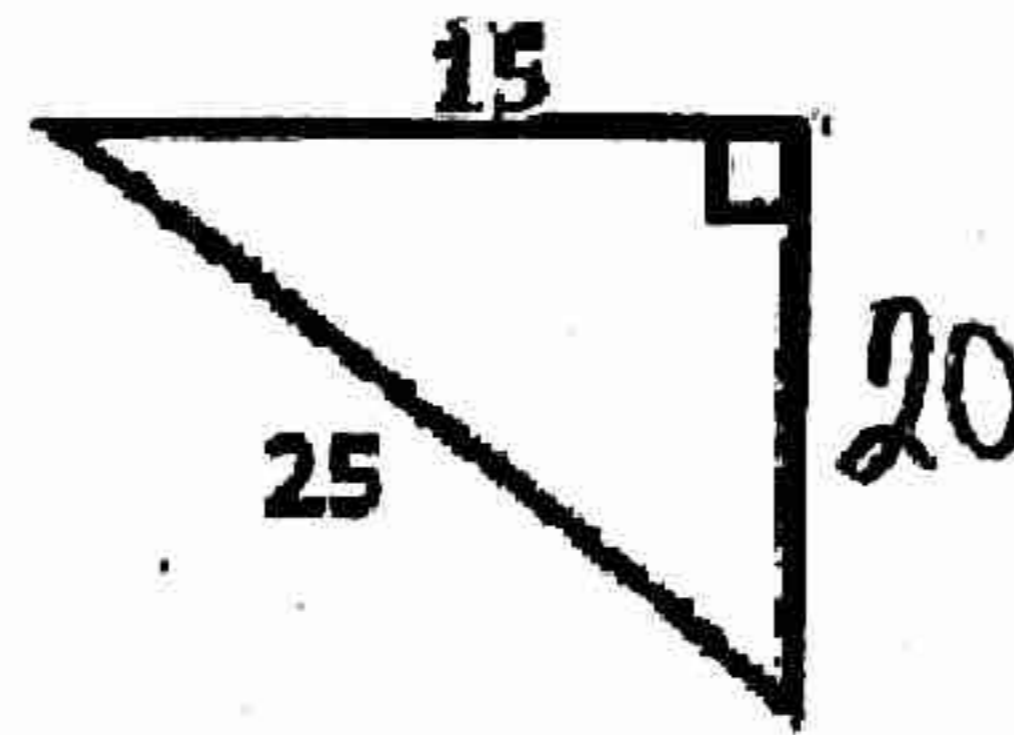
Find the area and perimeter of each of the following triangles.

21.



Area: 210 units²
 Perimeter: 84 units

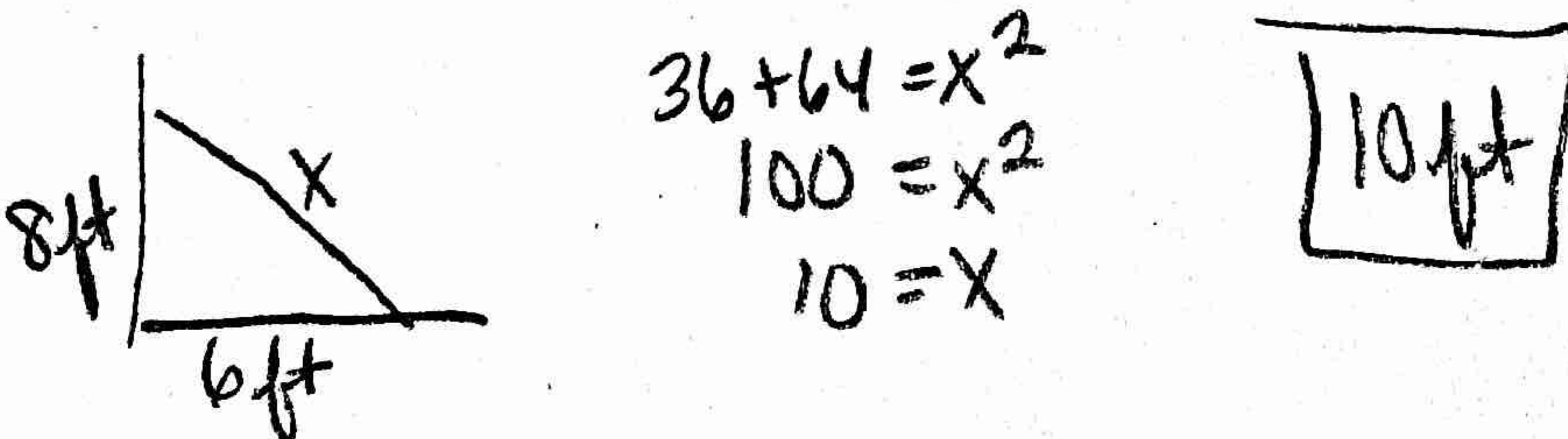
22.



Area: 150 units²
 Perimeter: 60 units

Solve by drawing a picture, identify a, b, and c, and apply the Pythagorean Theorem. Don't forget to give your answer in units!

23. The foot of a ladder is placed 6 feet from a wall. If the top of the ladder rests 8 feet up on the wall, how long is the ladder?



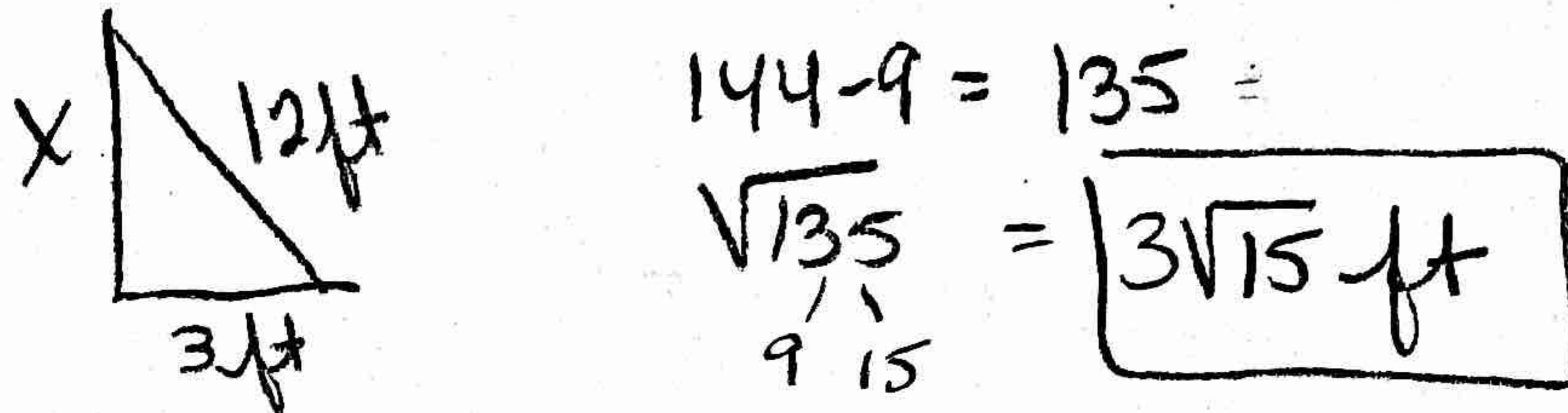
$$36 + 64 = X^2$$

$$100 = X^2$$

$$10 = X$$



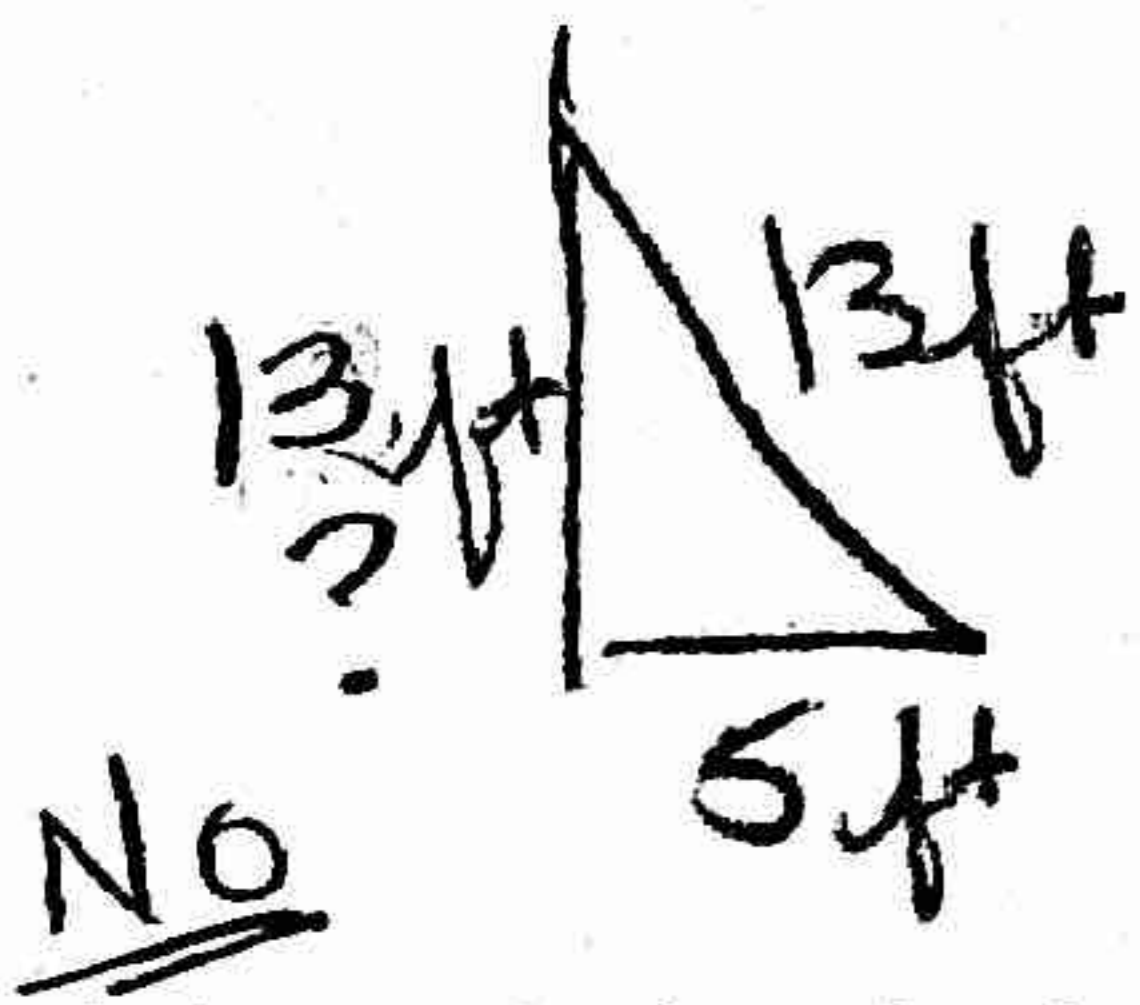
24. The bottom of a ladder must be placed 3 feet from a wall. The ladder is 12 feet long. How far above the ground does the ladder touch the wall?



$$144 - 9 = 135 =$$

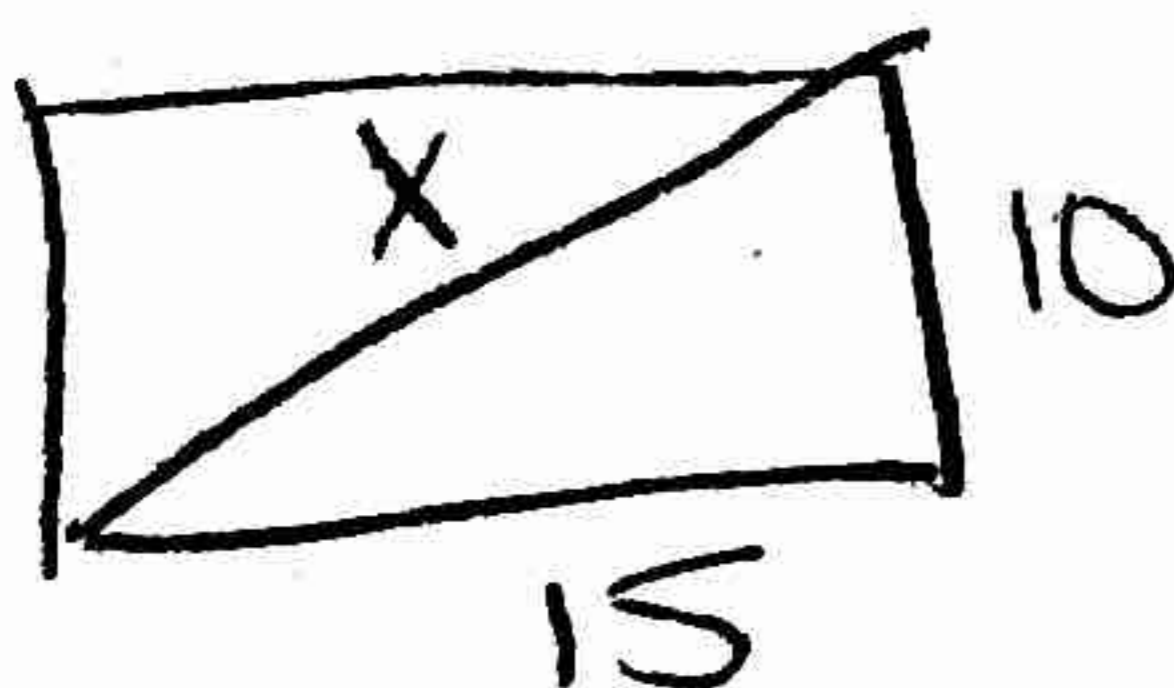
$$\sqrt{135} = 3\sqrt{15} \text{ ft}$$

25. A 13 feet ladder is placed 5 feet away from a wall. The distance from the ground straight up to the top of the wall is 13 feet. Will the ladder reach the top of the wall?



No the ladder will only reach 12ft up wall.

26. What is the length of the diagonal of a 10 cm by 15 cm rectangle?



$$\sqrt{325}$$

$$25 \quad 13$$

