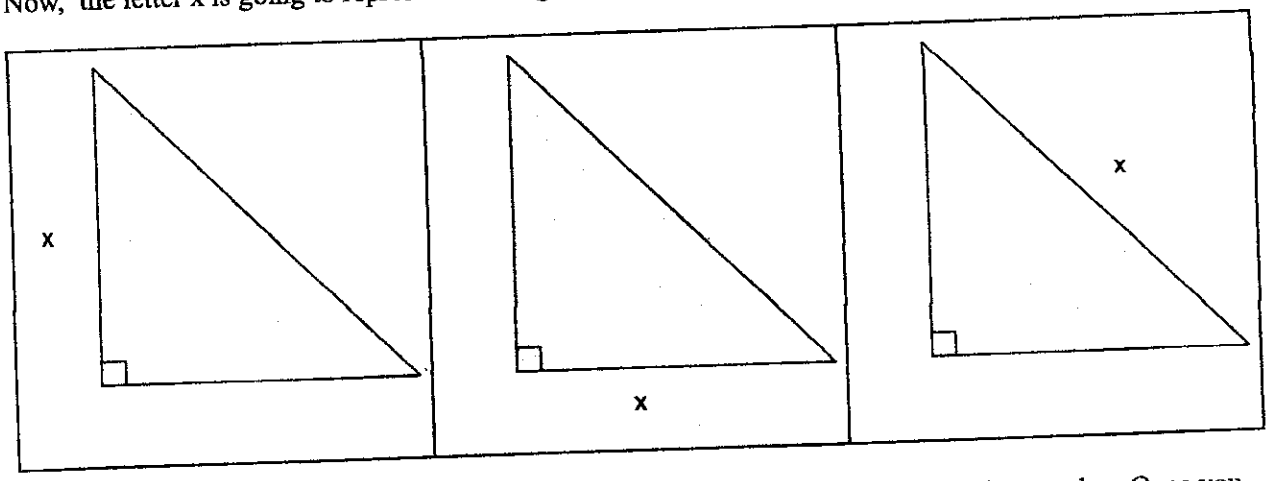
Activity 41

Legibly write your Student ID number and period number on every page. Do NOT write your name.

Student ID (######)	Date (MM/DD/YYYY)	Period (#)
000000	03/11/2024	0

Guided Learning

Now, the letter x is going to represent the length of the side of a triangle.



There is no such thing as a "negative length;" this means that x can only be a positive number. Once you solve for x, you must write the reason why your answer is only the positive number. Your answer must include the following three statements:

$x = \{-\#, \#\}$ {Your original answer to solving for x}
$x \in R \mid x > 0$ {Your reason why x cannot be negative}
$\therefore x = \{\#\}$ {Therefore, the correct value for x is the positive number}

Solve for x, given that x must be a positive number.

1 $x^2 + 16 = 25$

$-16 \quad -16$

$\sqrt{x^2} = \sqrt{9}$

$|x| = 3$

$x = \{-3, 3\}$

$x \in R \mid x > 0$

$\therefore x = \{3\}$

2 $x^2 + 144 = 169$

$-144 \quad -144$

$\sqrt{x^2} = \sqrt{25}$

$|x| = 5$

$x = \{-5, 5\}$

$x \in R \mid x > 0$

$\therefore x = \{5\}$

3 $x^2 + 576 = 625$

$-576 \quad -576$

$\sqrt{x^2} = \sqrt{49}$

$|x| = 7$

$x = \{-7, 7\}$

$x \in R \mid x > 0$

$\therefore x = \{7\}$

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4 $9 + x^2 = 25$

$-9 \quad -9$

$\sqrt{x^2} = \sqrt{16}$

$|x| = 4$

$x = \{-4, 4\}$

$x \in R \mid x > 0$

$\therefore x = \{4\}$

5 $25 + x^2 = 169$

$-25 \quad -25$

$\sqrt{x^2} = \sqrt{144}$

$|x| = 12$

$x = \{-12, 12\}$

$x \in R \mid x > 0$

$\therefore x = \{12\}$

6 $49 + x^2 = 625$

$-49 \quad -49$

$\sqrt{x^2} = \sqrt{576}$

$|x| = 24$

$x = \{-24, 24\}$

$x \in R \mid x > 0$

$\therefore x = \{24\}$

7 $9 + 16 = x^2$

$\sqrt{25} = \sqrt{x^2}$

$5 = |x|$

$x = \{-5, 5\}$

$x \in R \mid x > 0$

$\therefore x = \{5\}$

8 $25 + 144 = x^2$

$\sqrt{169} = \sqrt{x^2}$

$13 = |x|$

$x = \{-13, 13\}$

$x \in R \mid x > 0$

$\therefore x = \{13\}$

9 $49 + 576 = x^2$

$\sqrt{625} = \sqrt{x^2}$

$25 = |x|$

$x = \{-25, 25\}$

$x \in R \mid x > 0$

$\therefore x = \{25\}$

10 $x^2 + 225 = 289$

$-225 \quad -225$

$\sqrt{x^2} = \sqrt{64}$

$|x| = 8$

$x = \{-8, 8\}$

$x \in R \mid x > 0$

$\therefore x = \{8\}$

11 $x^2 + 1600 = 1681$

$-1600 \quad -1600$

$\sqrt{x^2} = \sqrt{81}$

$|x| = 9$

$x = \{-9, 9\}$

$x \in R \mid x > 0$

$\therefore x = \{9\}$

12 $x^2 + 3600 = 3721$

$-3600 \quad -3600$

$\sqrt{x^2} = \sqrt{121}$

$|x| = 11$

$x = \{-11, 11\}$

$x \in R \mid x > 0$

$\therefore x = \{11\}$

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13 $64 + x^2 = 289$

$-64 \quad -64$

$\sqrt{x^2} = \sqrt{225}$

$|x| = 15$

$x = \{-15, 15\}$

$x \in R \mid x > 0$

$\therefore x = \{15\}$

14 $81 + x^2 = 1681$

$-81 \quad -81$

$\sqrt{x^2} = \sqrt{1600}$

$|x| = 40$

$x = \{-40, 40\}$

$x \in R \mid x > 0$

$\therefore x = \{40\}$

15 $121 + x^2 = 3721$

$-121 \quad -121$

$\sqrt{x^2} = \sqrt{3600}$

$|x| = 60$

$x = \{-60, 60\}$

$x \in R \mid x > 0$

$\therefore x = \{60\}$

16 $64 + 225 = x^2$

$\sqrt{289} = \sqrt{x^2}$

$|x| = 17$

$x = \{-17, 17\}$

$x \in R \mid x > 0$

$\therefore x = \{17\}$

17 $81 + 1600 = x^2$

$\sqrt{1681} = \sqrt{x^2}$

$41 = |x|$

$x = \{-41, 41\}$

$x \in R \mid x > 0$

$\therefore x = \{41\}$

18 $121 + 3600 = x^2$

$\sqrt{3721} = \sqrt{x^2}$

$61 = |x|$

$x = \{-61, 61\}$

$x \in R \mid x > 0$

$\therefore x = \{61\}$

19 $x^2 + 1225 = 1369$

$-1225 \quad -1225$

$\sqrt{x^2} = \sqrt{144}$

$|x| = 12$

$x = \{-12, 12\}$

$x \in R \mid x > 0$

$\therefore x = \{12\}$

20 $x^2 + 7056 = 7225$

$-7056 \quad -7056$

$\sqrt{x^2} = \sqrt{169}$

$|x| = 13$

$x = \{-13, 13\}$

$x \in R \mid x > 0$

$\therefore x = \{13\}$

21 $x^2 + 3969 = 4225$

$-3969 \quad -3969$

$\sqrt{x^2} = \sqrt{256}$

$|x| = 16$

$x = \{-16, 16\}$

$x \in R \mid x > 0$

$\therefore x = \{16\}$

THIS IS THE END OF THE ACTIVITY