

## 8th Grade Math Assignments

April 13-24

This week we have two options for assignments- online and on paper. These assignments are supposed to last you the two weeks, so work on them at your own pace. You only need to do ONE set of assignments. (unless you're super bored and want to do both- knock yourself out)

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If you have internet access and want to submit work online, please **still do the two Pythagorean Theorem worksheets in this packet. You will be able to submit them in Google Classroom if you want. Also on Google Classroom, you will see additional Pearson and ALEKS assignments for this week.** These assignments will include videos and practice problems that can help guide you while you work on the worksheets. In addition to these worksheets, **you are expected to work on ALEKS for at least one hour each week.** If you're having trouble logging in to any of the programs, please visit: [tinyurl.com/rax8h9n](http://tinyurl.com/rax8h9n)

Mr. Arredondo's Google Classroom Code: sp5lqtx

Mr. Lackow's Google Classroom Code: rxyfv7

Please still use the notes pages that came with this packet when you work online- *we are practicing the same skills in both places!*

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If you don't have access or would prefer to work on paper, here are this week's alternate assignments:

1. Work on the Skills Survey paper to practice basic skills (**substitute for ALEKS**)- both sides, all 40 questions, **no calculator**.
2. Read through the notes on the Pythagorean Theorem
3. Work on the both Pythagorean Theorem Worksheet

To turn in this work (just the worksheets, please keep the notes!), you can either

- Drop it off in the box at AMS by the breakfast/lunch pickup, on Wednesdays and Thursdays from 10:00AM-2:00PM. Please put your work back in the envelope and make sure your first and last name and your teacher's name is on it!
- Drop it off at Keeling, Holaway, or Rio Vista on Fridays from 8:00AM-12:30PM. Look for the black bin labeled AMS. Please put your work back in the envelope and make sure your first and last name and your teacher's name is on it!
- Take a picture of it and email it to your teacher, or upload it to the Google Classroom assignments.

Our websites have lots of ways to contact us if you need help. Please let us know! We miss you and hope you are doing well!

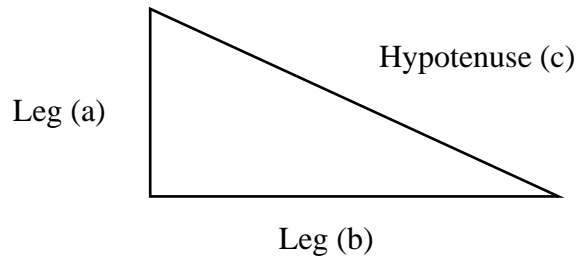
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## Topic: Pythagorean Theorem

Hypotenuse – The longest side of a right triangle. It is the side that is across from the right angle.

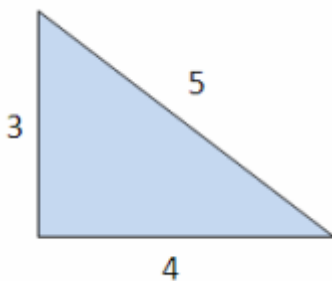
Legs – The two shortest sides of a right triangle.



Pythagorean Theorem – A formula used to determine unknown lengths in a right triangle. The sum of the squares of the legs equals the square of the hypotenuse

$$\text{Formula: } a^2 + b^2 = c^2$$

Example 1: Use the Pythagorean Theorem to show that the following triangle is a right triangle.



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

Write down formula

$$3^2 + 4^2 = 5^2$$

Substitute side lengths into formula

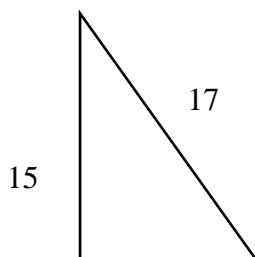
$$9 + 16 = 25$$

Evaluate the exponents

$$25 = 25$$

Since we get the same number on both sides of the equation, the triangle is a right triangle.

Example 2: Use the Pythagorean Theorem to find the missing side length of the right triangle.



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

Write down formula

$$a^2 + 15^2 = 17^2$$

Substitute known side lengths into formula

$$a^2 + 225 = 289$$

Evaluate the exponents

$$a^2 = 64$$

Subtract 225 from both sides

$$a = 8$$

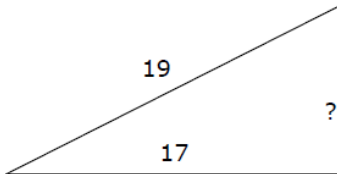
Take the square root of both sides to find the unknown side length

NAME:

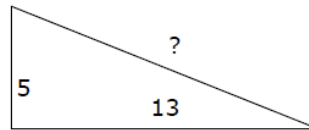
## PYTHAGOREAN THEOREM - WORKSHEET

For each triangle find the missing length. Round your answer to the nearest tenth. Then find the area and the perimeter.

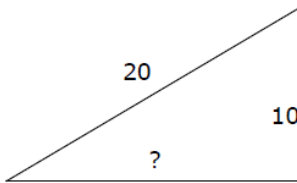
1.



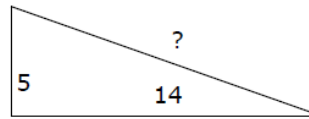
2.



3.



4.



For #5-9 c is the hypotenuse of the right triangle ABC with sides a, b, c

5.  $a = 12$  ;  $b = 5$  ;  $c =$  \_\_\_\_\_

6.  $a = 8$  ;  $b =$  \_\_\_\_\_ ;  $c = 10$

7.  $a = 15$  ;  $b =$  \_\_\_\_\_ ;  $c = 17$

8.  $a =$  \_\_\_\_\_ ;  $b = 40$  ;  $c = 50$

9.  $a =$  \_\_\_\_\_ ;  $b = 2$  ;  $c = 4$

10. Find a third number so that the three numbers form a right triangle:

i) 9 , 41

ii) 13 , 85

11. Ms. Green tells you that a right triangle has a hypotenuse of 13 and a leg of 5. She asks you to find the other leg of the triangle. What is your answer?

12. Two joggers run 8 miles north and then 5 miles west. What is the shortest distance, to the *nearest tenth* of a mile, they must travel to return to their starting point?

13. Oscar's dog house is shaped like a tent. The slanted sides are both 5 feet long and the bottom of the house is 6 feet across. What is the height of his dog house, in feet, at its tallest point?

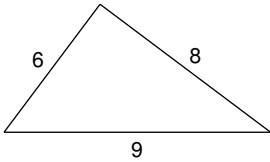
14. To get from point A to point B you must avoid walking through a pond. To avoid the pond, you must walk 34 meters south and 41 meters east. To the *nearest meter*, how many meters would be saved if it were possible to walk through the pond?

15. A suitcase measures 24 inches long and the diagonal is 30 inches long. How much material is needed to cover one side of the suitcase?

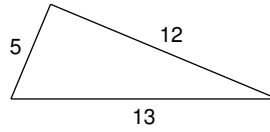
## The Pythagorean Theorem

Do the following lengths form a right triangle?

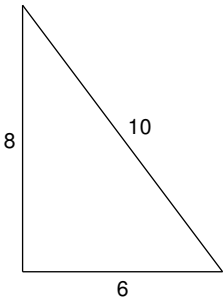
1)



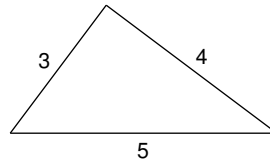
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3)

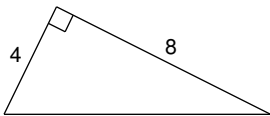


4)

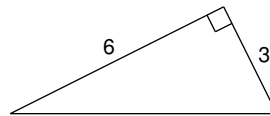
5)  $a = 6.4$ ,  $b = 12$ ,  $c = 12.2$ 6)  $a = 2.1$ ,  $b = 7.2$ ,  $c = 7.5$ 

Find each missing length to the nearest tenth.

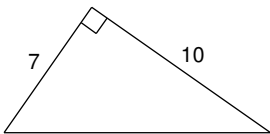
7)



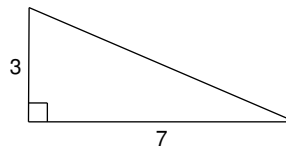
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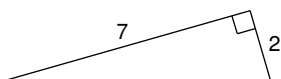
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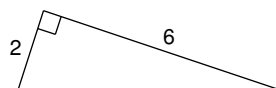
10)



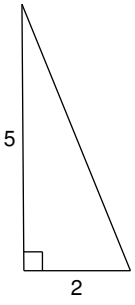
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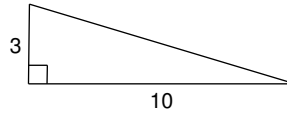
12)



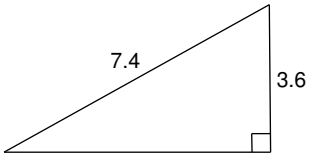
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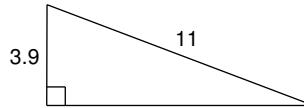
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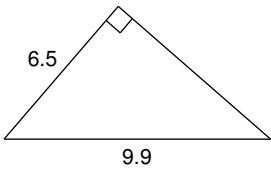
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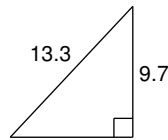
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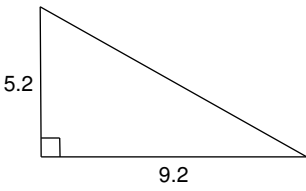
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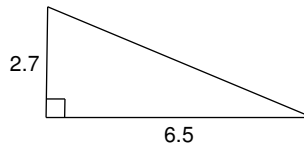
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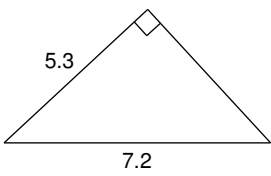
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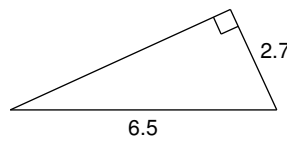
20)



21)



22)



Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_

1	$4 - (-6)$	2	$-35 \div 7$	3	$\frac{5}{8} - \frac{13}{8}$	4	$\frac{5}{7} - \left(-\frac{1}{6}\right)$
5	$-\frac{1}{5} \cdot -\frac{3}{2}$	6	$7.4 - (-3.7)$	7	$52.682 \cdot 100$	8	$(-12 \cdot 2) \div 4$
9	$(-6) + (-8)$	10	$4 \cdot -2$	11	$\left(-\frac{7}{4}\right) + \left(-\frac{7}{4}\right)$	12	$\left(-\frac{9}{7}\right) - \frac{7}{8}$
13	$\frac{7}{8} \div -\frac{8}{5}$	14	$5.1 - 6.1$	15	$6400 \div 1000$	16	$2 \div 2 \cdot -10 \div 2$
17	$(-3) + (-4)$	18	$-40 \div -10$	19	$\frac{5}{4} + \left(-\frac{7}{4}\right)$	20	$\frac{1}{3} + \left(-\frac{3}{7}\right)$

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_

<sup>21</sup> $\frac{3}{2} \div -\frac{2}{5}$	<sup>22</sup> $2.4 - (-7.7)$	<sup>23</sup> $8.2 \cdot 1000$	<sup>24</sup> $-2 + 6 - 4 \div -2$
<sup>25</sup> $5 - (-8)$	<sup>26</sup> $-2 \cdot -7$	<sup>27</sup> $\frac{3}{7} - \left(-\frac{4}{7}\right)$	<sup>28</sup> $\left(-\frac{1}{2}\right) - \left(-\frac{5}{3}\right)$
<sup>29</sup> $\frac{3}{4} \cdot -\frac{4}{5}$	<sup>30</sup> $(-3.1) + 1.8$	<sup>31</sup> $.0231 \cdot 10000$	<sup>32</sup> $(10 \cdot 2) \div (-2)$
<sup>33</sup> $8 - (-4)$	<sup>34</sup> $42 \div -7$	<sup>35</sup> $\frac{15}{8} + \left(-\frac{9}{8}\right)$	<sup>36</sup> $\left(-\frac{4}{3}\right) - \frac{3}{2}$
<sup>37</sup> $\frac{1}{3} \cdot -\frac{3}{2}$	<sup>38</sup> $(-7.1) - 7.1$	<sup>39</sup> $7.25 \div 1000$	<sup>40</sup> $1 - (2 + 5)$



Name: \_\_\_\_\_ Teacher: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_

1	$-6 - 4$	2	$-50 \div -10$	3	$-\frac{4}{3} - \frac{1}{3}$	4	$\frac{7}{8} + \left(-\frac{2}{3}\right)$
5	$-\frac{2}{9} \cdot \frac{1}{5}$	6	$-7.9 - 0.8$	7	$0.04 \cdot 100$	8	$4 \cdot 4 - (4 - 1)$
9	$8 + (-2)$	10	$-4 \cdot -9$	11	$\frac{1}{3} - \frac{2}{3}$	12	$4 - \frac{9}{7}$
13	$\frac{1}{4} \div \frac{2}{3}$	14	$-4.7 - 4.2$	15	$-3.8 \div 10000$	16	$3 + 5 - 8 \div 2$
17	$6 - (-6)$	18	$63 \div 9$	19	$-\frac{9}{5} + \left(-\frac{7}{5}\right)$	20	$\frac{5}{4} + \left(-\frac{1}{8}\right)$

Name: \_\_\_\_\_ Teacher: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_

21	$-\frac{1}{8} \cdot -\frac{1}{5}$	22	$-5.7 + (-7.6)$	23	$3.6 \cdot 10000$	24	$(10 + 2) \div (6 - 3)$
25	$-4 - (-3)$	26	$-6 \cdot 9$	27	$\frac{1}{6} - \frac{5}{6}$	28	$\frac{2}{5} - \frac{5}{3}$
29	$-\frac{1}{3} \div \frac{4}{3}$	30	$-6.1 + 7.8$	31	$2 \div 100$	32	$(4 + 9 + 7) \div 5$
33	$-3 + 7$	34	$-4 \div 2$	35	$-\frac{8}{7} - \frac{6}{7}$	36	$\frac{1}{8} + \left(-\frac{2}{7}\right)$
37	$-\frac{2}{3} \cdot \frac{5}{4}$	38	$1 - (-5.2)$	39	$21.5 \cdot 100$	40	$4 \cdot 2 - 8 \div 4$