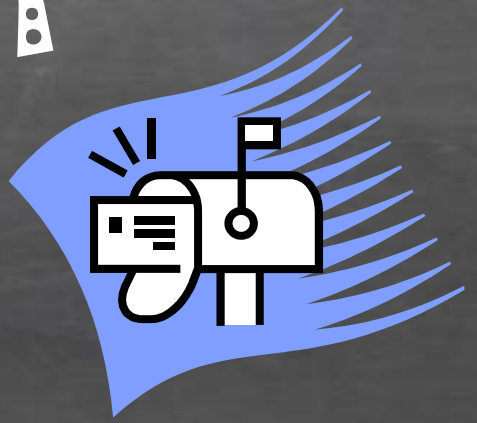
Pythagorean Theorem Puzzle

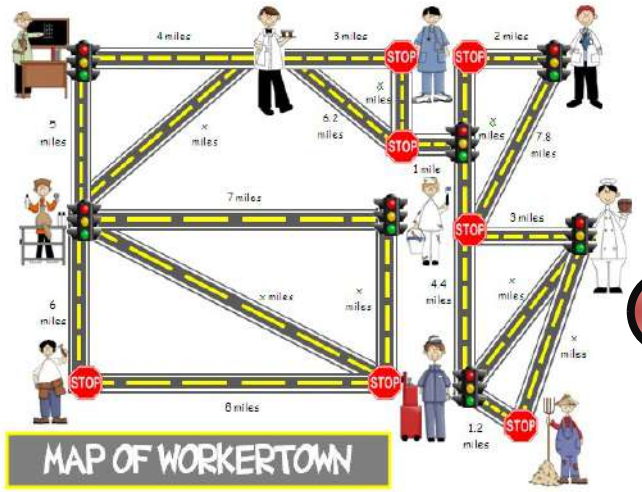


Help Darius find his way through Workertown using the Pythagorean Theorem!

DARIUS' DILEMMA

MAP NOT DRAWN TO SCALE

Darius is trying to solve a dilemma. He is the new mailman for the town and is trying to remember all of his stops. To help him out, the old mailman left him this map, so he can track his mileage:



MAP OF WORKERTOWN

The only problem is that some of the distances have worn off and he needs to figure out certain values.

Help Darius figure out the values by solving the Pythagorean Theorem. Some problems may need to be solved before others can be solved! Just to review:

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

ROUND TO NEAREST HUNDREDTH

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4 miles

3 miles

STOP

STOP

2 miles

y miles

6.2 miles

STOP

5 miles

x miles

z miles

7.8 miles

1 mile

7 miles

STOP

3 miles

p miles

S miles

4.4 miles

q miles

6 miles

w miles

STOP

STOP

STOP

8 miles

1.2 miles

N

W

E

S

MAP OF WORKERTOWN

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Darius' Dilemma

1. Darius needs to keep track of his mileage. One of the distances he needs to find is the length between the restaurant and the veterinarian's office. To find this you need to have two legs. Leg a is from the _____ to the _____ and Leg b is from the _____ to the _____. Plug the values in and solve for letter, _____.

Solve here:

Solve here:

2. Another distance is the length between the doctors' office and the stop sign to the south, which will take him to the pharmacy. This time, you know the hypotenuse is 6.2 miles. You also know that one of the legs is 3 miles. That is Leg _____. You need to find Leg _____. Plug in and solve for letter, _____.

3. He also needs to find the distance from the west side the of the painters building to the mechanic, but first needs distance to find the distance from the mechanic to the vet. building to

4. Now that you know the distance from mechanic to the vet, you can find the from the west side of the painters

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Solve here:

Solve here:

the mechanic.

5. He also needs to find the distance from the east side of the doctors office to the painter.

6. Darius needs to find the distance from the landscaper to the mechanic.

Solve here:

Solve here:

7. Solve for the distance between the landscaper and the farmer.

8. There is talk in the town of making a more direct road from the mechanic and the teacher. How long would the road be?

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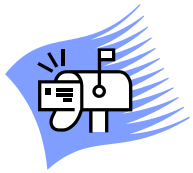
Solve here:

Solve here:

9. There is also talk about creating a road that goes from the bakery to where the carpenter is located. Be careful – there's a trick to counting the miles from the teacher to the baker. What's the distance?

Darius' Dilemma



ANSWER KEY

Solve here:

6.40

1. Darius needs to keep track of his mileage. One of the distances he needs to find is the length between the restaurant and the veterinarian's office. To find this you need to have two

Solve here:

5.43

Solve here:

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legs. Leg a is from the _restaurant_ to the _school___ and Leg b is from the _____school____ to the ____vet_____. Plug the values in and solve for letter, ___c___.

2. Another distance is the length between the doctors' office and the stop sign to the south, which will take him to the pharmacy. This time, you know the hypotenuse is 6.2 miles. You also know that one of the legs is 3 miles. That is Leg _a__. You need to find Leg __b__. Plug in and solve for letter, __c__.

3. He also needs to find the distance from the west side the of the painters building to the mechanic, but first needs distance to find the distance from the mechanic to the vet.

4. Now that you know the distance from mechanic to the vet, you can find the from the west side of the painters building to

Solve here:

10.00

Solve here:

7.14

the mechanic.

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ANSWER KEY

5. He also needs to find the distance from the east side of the doctors office to the painter.

Solve here:

7.54

6. Darius needs to find the distance from the landscaper to the mechanic.

Solve here:

5.33

7. Solve for the distance between the landscaper and the farmer.

Solve here:

5.46

8. There is talk in the town of making a more direct road from the mechanic and the teacher.

Solve here:

13.60

How long would the road be?

Solve here:

14.87

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9. There is also talk about creating a road that goes from the bakery to where the carpenter is located. Be careful – there's a trick to counting the miles from the teacher to the baker. What's the distance?

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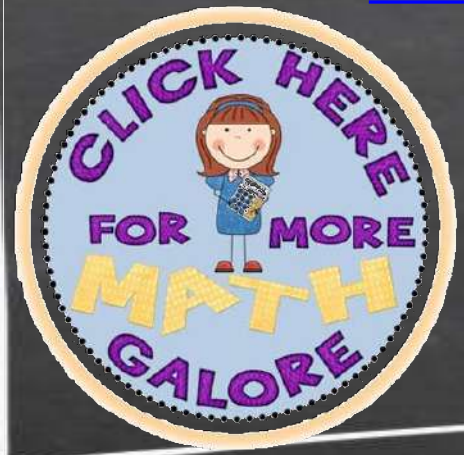

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