**Part 1: Application of the Pythagorean Theorem.**

*Use the Pythagorean Theorem to solve the following problems*

1.

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?



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| Sketch |  |
| Given lengths |  |
| Missing lengths |  |
| Rule |  |
| Using the rule |  |
| Answer |  |
| Explanation*(explain the solution to the problem in words. Justify the steps).* |  |



2.

A baseball diamond is a square with sides of 90 feet.

What is the shortest distance, to the nearest tenth of a foot,

 between first base and third base?

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| Sketch |  |
| Given lengths |  |
| Missing lengths |  |
| Rule |  |
| Using the rule |  |
| Answer |  |
| Explanation*(explain the solution to the problem in words. Justify the steps).* |  |

3.

In a computer catalog, a computer monitor is listed as being 19 inches.

This distance is the diagonal distance across the screen. If the screen

measures 10 inches in height, what is the actual width of the screen

to the nearest inch?



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| Sketch |  |
| Given lengths |  |
| Missing lengths |  |
| Rule |  |
| Using the rule |  |
| Answer |  |
| Explanation*(explain the solution to the problem in words. Justify the steps).* |  |



4.

Two joggers run 8 km north and then 5 km west.

What is the shortest distance, to the nearest tenth

of a kilometer, they must travel to return to their

starting point?

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| Sketch |  |
| Given lengths |  |
| Missing lengths |  |
| Rule |  |
| Using the rule |  |
| Answer |  |
| Explanation*(explain the solution to the problem in words.* *Justify the steps).* |  |

5.

Seth made a small rectangular table for his workroom.

The sides of the table are 36 cm and 18 cm. If the diagonal

of the table measures 43 cm, is the table square? A table

which is “square” has right angles at the corners.



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| Sketch |  |
| Given lengths |  |
| Missing lengths |  |
| Rule |  |
| Using the rule |  |
| Answer |  |
| Explanation*(explain the solution to the problem in words.* *Justify the steps).* |  |



6.

You’re locked out of your house and the only open window

is on the second floor, 25 feet above the ground. You need to

borrow a ladder from one of your neighbours. There’s a bush

along the edge of the house, so you’ll have to place the ladder

10 feet from the house. What length of ladder do you need to

 reach the window?

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| Sketch |  |
| Given lengths |  |
| Missing lengths |  |
| Rule |  |
| Using the rule |  |
| Answer |  |
| Explanation*(explain the solution to the problem in words.* *Justify the steps).* |  |