

The Pythagorean Theorem Game

Goal: compete against other players to be the first to go around the game board twice.

To start, each player throws the die. The player with the highest number starts to play. The players take turns, clockwise.

When it is his turn, the player throws the two dice. The first time the players go around the board, the numbers obtained on the dice represent the length of both sides (a and b) of a triangle. On subsequent rounds, the player must find the hypotenuse's length to know the number of movements (the integer closest to the square root of the sum of the squares of the two sides) to make on the game board. Movements are made clockwise from one square to another. The second time the players go around the game board, the smallest number obtained after throwing the dice represents the length of side " a " of the triangle and the second number represents the length of side " b ". So, the player has to calculate the length of the hypotenuse's length. So, the player has to calculate the length of side " c " of the triangle to know the number of movements to make.

If you land on a square "?", take a question card. If you answer the question correctly, you can throw the die again and move forward according to the number of squares indicated by the die. If you do not answer the question correctly, your turn ends and it is the next player's turn.

If you land on a square with a pink triangle, follow the instructions.

Each player makes a record of their progress on a sheet of paper and compares it to the other players.


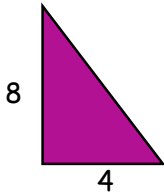
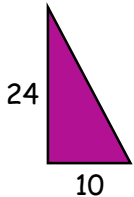
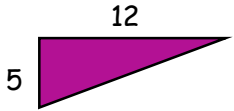

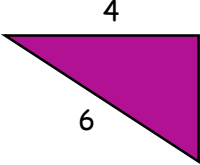
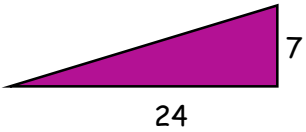
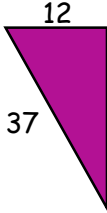
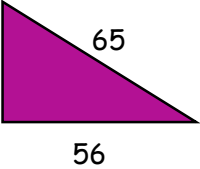
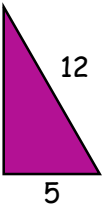
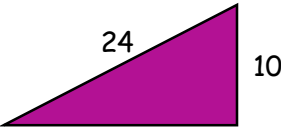
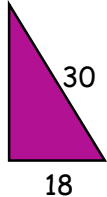
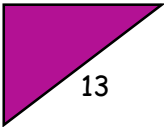
Good luck!

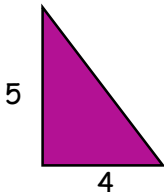
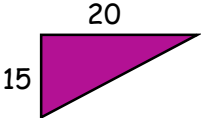
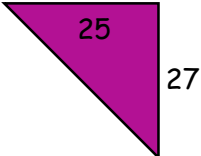
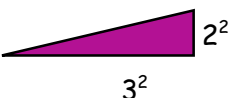
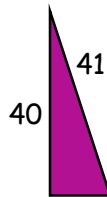
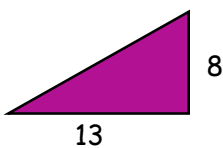

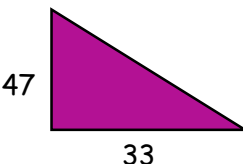
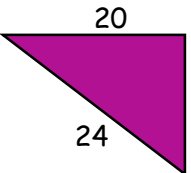
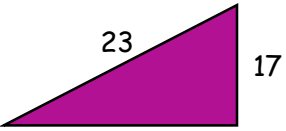
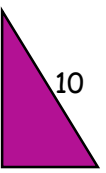
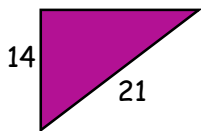
The game board is a large right-angled triangle composed of many small squares. The board is divided into several sections:

- Start Section:** A purple square at the bottom right corner labeled "Start" with a white arrow pointing left.
- Question Squares:** White squares containing blue question marks ("?").
- Triangle Squares:** White squares containing a pink right-angled triangle.
- Instructional Squares:** White squares containing text instructions:
 - "Back to start/Throw the dice again"
 - "Move forward $\sqrt{36}$ squares"
 - "Move back 3 squares"
 - "Move back to angle C"
- Side Labels:** Large letters a , b , and c are placed near the bottom-left vertex of the triangle.
- Central Area:** A light blue area in the center of the triangle contains a dashed line forming a smaller triangle, with a large blue question mark in the middle.
- Outer Border:** The outer border of the triangle is decorated with alternating purple and white squares. Some purple squares contain a pink triangle, and some white squares contain a blue question mark.

Good luck!

Start

 <p>A dog runs 29 metres, diagonally, from the corner of a rectangular park to the opposite corner. The park's length is 20 metres; what is its height?</p> <p>1</p>	<p>In a park, the slide is situated west from the swings and south from the tree. If the slide is 12 metres away from the swings and the swings are 15 metres away from the tree, what is the distance between the tree and the slide?</p> <p>2</p>	<p>Ava cuts a shape in a rectangular fabric. She cuts diagonally from one corner to the other. The diagonal measures 50 cm in length and the width of the fabric is 48 cm.</p> <p>What is the fabric's length?</p> <p>3</p>	<p>Fernando is about to build a water slide that ends into his pool. The length of the slide is 17'. The end of the slide, the place where it lands into the pool, is 15' away from the base of the ladder.</p> <p>What is the ladder's height?</p> <p>4</p>
<p>Find the hypotenuse's length.</p>  <p>5</p>	<p>Find the hypotenuse's length.</p>  <p>6</p>	<p>Find the hypotenuse's length.</p>  <p>7</p>	<p>Find the hypotenuse's length.</p>  <p>8</p>
<p>Find the perimeter.</p>  <p>9</p>	<p>Find the perimeter.</p>  <p>10</p>	<p>Find the perimeter.</p>  <p>11</p>	<p>Find the perimeter.</p>  <p>12</p>
<p>Find the length of the missing side.</p>  <p>13</p>	<p>Find the length of the missing side.</p>  <p>14</p>	<p>Find the length of the missing side.</p>  <p>15</p>	<p>Find the length of the missing side.</p>  <p>16</p>

<p>Find the hypotenuse's length.</p>  <p>17</p>	<p>Find the hypotenuse's length.</p>  <p>18</p>	<p>Find the hypotenuse's length.</p>  <p>19</p>	<p>Find the hypotenuse's length.</p>  <p>20</p>
<p>Find the perimeter.</p>  <p>21</p>	<p>Find the perimeter.</p>  <p>22</p>	<p>Find the perimeter.</p>  <p>23</p>	<p>Find the hypotenuse's length.</p>  <p>24</p>
<p>Find the length of the missing side.</p>  <p>25</p>	<p>Find the length of the missing side.</p>  <p>26</p>	<p>Find the length of the missing side.</p>  <p>27</p>	<p>Find the length of the missing side.</p>  <p>28</p>
<p>The mast of a flag broke during a storm. The bottom of the mast, which height is 7 m, is still planted vertically in the ground, but the top fell over and its tip is now touching the ground, 24 metres from the base of the mast. What was the mast's height before it broke?</p> <p>29</p>	<p>A plane is flying above Paris. He must land in an airport that is 19 km away from the city. To come down, he has to cover 20 km. At what altitude was it flying above Paris?</p> <p>30</p>	<p>The mast of a boat is attached to the deck with an 8 metre cable. The mast's height is 5 m. What is the distance between the base of the mast and the base of the cable?</p> <p>31</p>	





Answers

1. $\sqrt{441}$ or 21 m
2. $\sqrt{81}$ or 9 m
3. $\sqrt{196}$ or 14 cm
4. $\sqrt{64}$ or 8'
5. $\sqrt{80}$ or 8,9
6. $\sqrt{676}$ or 26
7. $\sqrt{169}$ or 13
8. $\sqrt{53}$ or 7,28
9. 14,47
10. 56
11. 84
12. 154
13. $\sqrt{119}$ or 10,9
14. $\sqrt{476}$ or 21,8
15. $\sqrt{576}$ or 24
16. $\sqrt{88}$ or 9,38
17. $\sqrt{41}$ or 6,4
18. $\sqrt{625}$ or 25
19. $\sqrt{1354}$ or 36,79
20. 9,85 or $3,14^2$
21. 90
22. 36,26
23. 40,29
24. $\sqrt{3298}$ or 57,43
25. $\sqrt{176}$ or 13,27
26. $\sqrt{240}$ or 15,49
27. $\sqrt{64}$ or 8
28. $\sqrt{245}$ or 15,65
29. 32 m
30. $\sqrt{39}$ or 6,25 km
31. $\sqrt{39}$ or 6,25 m