## Unit 8 Lesson 6: Finding Side Lengths of Triangles

### 1 Which One Doesn’t Belong: Triangles (Warm up)

#### Student Task Statement

Which triangle doesn’t belong?



### 2 A Table of Triangles

#### Images for Launch





#### Student Task Statement

1. Complete the tables for these three triangles:
* 

|  |  |  |  |
| --- | --- | --- | --- |
| * triangle
 | * $a$
 | * $b$
 | * $c$
 |
| * D
 |  |  |  |
| * E
 |  |  |  |
| * F
 |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| * triangle
 | * $a^{2}$
 | * $b^{2}$
 | * $c^{2}$
 |
| * D
 |  |  |  |
| * E
 |  |  |  |
| * F
 |  |  |  |

1. What do you notice about the values in the table for Triangle E but not for Triangles D and F?
2. Complete the tables for these three more triangles:
* 

|  |  |  |  |
| --- | --- | --- | --- |
| * triangle
 | * $a$
 | * $b$
 | * $c$
 |
| * P
 |  |  |  |
| * Q
 |  |  |  |
| * R
 |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| * triangle
 | * $a^{2}$
 | * $b^{2}$
 | * $c^{2}$
 |
| * P
 |  |  |  |
| * Q
 |  |  |  |
| * R
 |  |  |  |

1. What do you notice about the values in the table for Triangle Q but not for Triangles P and R?
2. What do Triangle E and Triangle Q have in common?

### 3 Meet the Pythagorean Theorem

#### Student Task Statement

1. Find the missing side lengths. Be prepared to explain your reasoning.
2. For which triangles does $a^{2}+b^{2}=c^{2}$?









© CC BY Open Up Resources. Adaptations CC BY IM.