

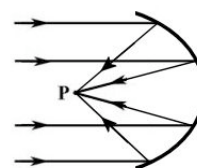
Lighting the Olympic Torch, October 18, 2021



The Olympic Flame for the 2022 Beijing Winter Games was lit in Ancient Olympia

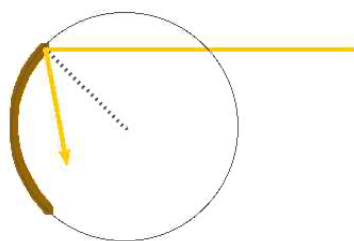
Several months before each Olympic game, the Olympic Torch is lit from a parabolic mirror that focuses the rays of the Sun. This tradition honors the strength and power of Apollo (The god of Light) in beginning the Games of the Olympics.

An actress, dressed as an ancient Greek priestess, performed the torch lighting ceremony on October 18th, 2021 at Mount Olympia. The torch is lit from the concentrated rays of the Sun.



On the YummyMath site, we created an animation that shows the sun's rays moving toward and reflecting off of a curved mirror. We asked you to describe what you noticed. These are a few questions about what we hoped that you noticed.

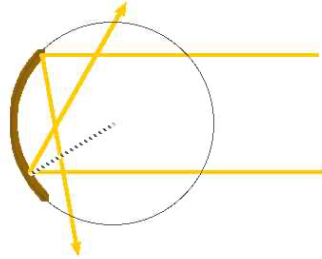
1. The mirror that we used in the animation wasn't a part of a parabola. What shape did we use in our animation?



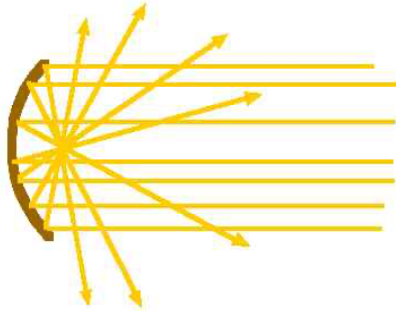
The dark mirror shape above is very similar to the usual shape of focusing mirrors ... parabolas. The shape on the left of this paragraph is a parabola. The reflection demonstrated in our animation is very close to the reflection of a parabolic shape where the reflections would all center at the parabola's focus. It was a simpler math demonstration to create our curved mirror as we did.

2. The top yellow line represents a ray of the Sun coming into the mirror and then being reflected to the more vertical ray off of the mirror. What does that dotted black line represent?

3. From playing billiards I've heard that the angle of inclination always equals the angle of reflection. How do you think that phrase applies to this curved mirror?
4. Here's another image from our animation. Are your answers to questions 2 and 3 born out? Please explain.



5. Here's the final image from our animation. Why do you think the actress/priestess is able to light the Olympic Torch without a flame?



6. What other instances have you seen where the parabolic shape is used to focus something?