

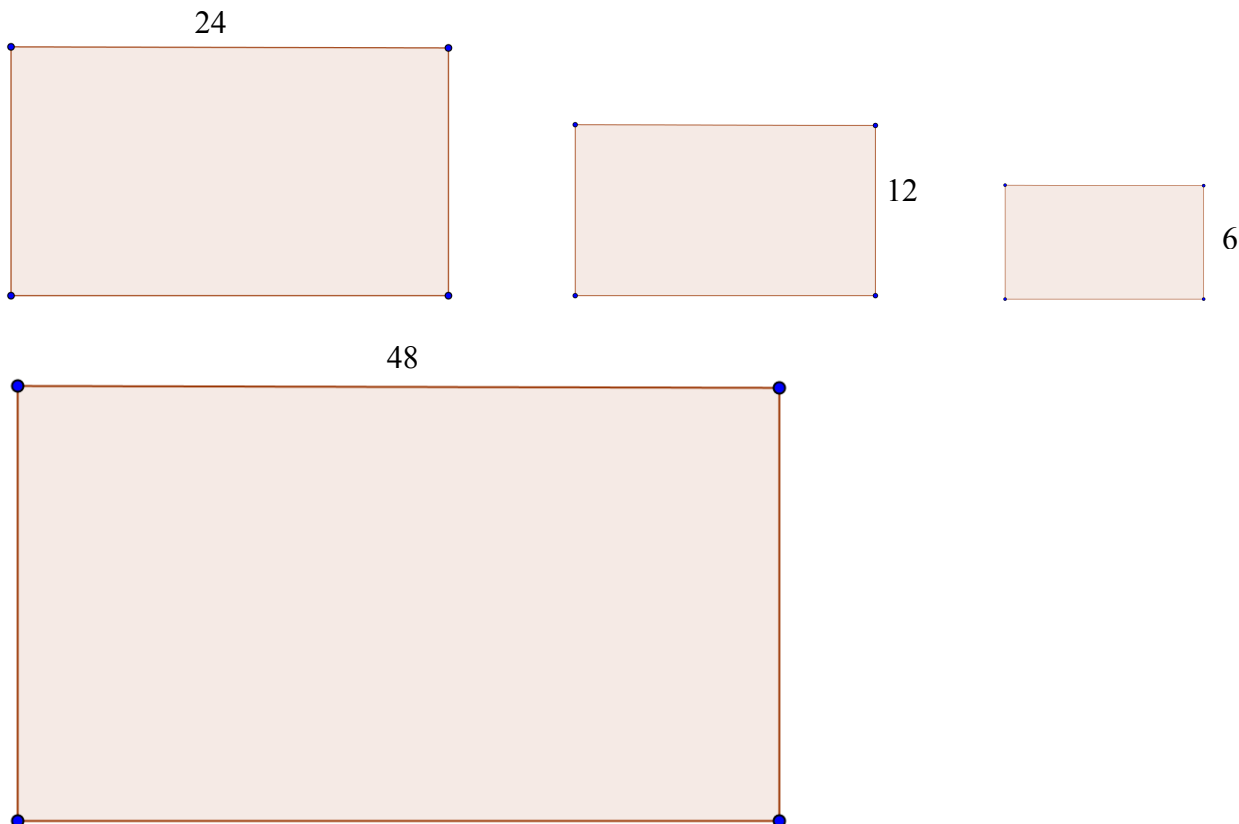
Glowing Rectangles?

Name _____

Today people spend a lot of time sitting in front of televisions, computers, smart phones, or other electronic devices with screens. Have you ever noticed that not all screens are the same rectangle? That is to say, they are not proportional or similar. The height to width ratio is not the same when you start comparing analog tube televisions, HD televisions and movie theatre screens. If you have been to an electronics store recently you have noticed many similar figures showcased along a wall. I am talking about HD televisions. HD screens are all similar to each other. The height to width ratio of HD screens is always the same. The same can be said for analog tube televisions and for most movie theatre screens and movie formats.

The typical HD screen has a width to height ratio of 16 to 9.

1. Find the missing dimension for each of the HD screens. Assume that all dimensions are in inches.

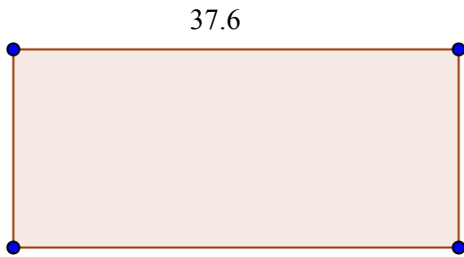


2. Give a width/height dimension that is **not** similar to this screen type.

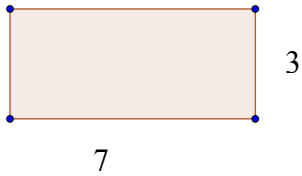
3. An HDTV screen is 40 inches wide. What is the height of the screen?

4. Sketch your own HD screen below. Make sure to label the side lengths. The screen should be similar to the other HD screens.

5. Here is one type of dimension for a movie theatre screen. Movies and movie theatre screens are often made in the format 2.35 to 1 (widescreen format, width to height). Find the missing dimensions. Assume that the dimensions are in feet.

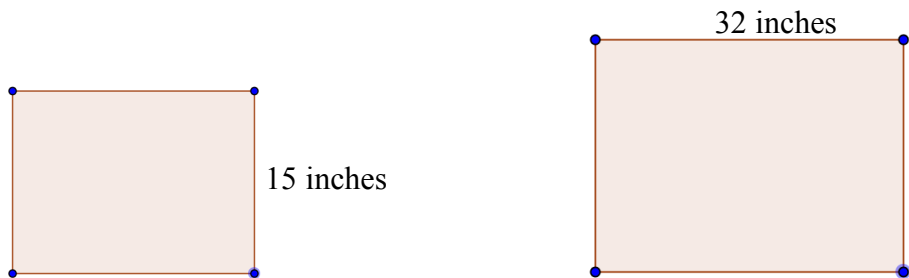


6. Is the screen below similar to a movie theatre screen? Show mathematical evidence to support your answer.



7. I grew up near a giant drive in theatre. The screen was about 150 feet wide. How tall was the screen?

8. Regular, **old analog tube television is a 4 to 3 ratio** (width to height). Find the missing dimensions. Assume all dimensions are in inches.



9. Give a few different widths and heights for screens that are similar to the tube screen. You might use a ratio table to organize your thinking:

width				
height				

10. Now measure your own glowing rectangles ... computers, smart phones, portable video game systems, digital cameras, iPad, iPhone or anything else with a screen would be good. Find the dimensions of the screens in millimeters. Use the table below to insert your data.

Product	Width	Height	Simplified Ratio of W:H

Are any of your screens or video playing area similar to the widescreen, HD or analog tube screen? Share your reasoning.

Now it is time to sort the glowing rectangles. Label each as either HD, tube, wide screen or none of the above. You will need to measure in centimeters and calculate to support your reasoning.

