

Problem Set 2

More Interesting Pictures

1. Write the function contracts and an example for each of the following functions:
 - a. ellipse
 - b. circle
 - c. right-triangle
 - d. star-polygon
 - e. rhombus

For each of the exercise below, define a variable (or variables) to complete the given task. Nothing should be displayed in the Interactions Pane when RUN is clicked.

2. Write an expression that produces the image to the right. You may use any colors that you wish for the shapes. The final image should be 200 pixels by 200 pixels.

(Note that the top edge of the triangle matches exactly the top edge of the square, and the bottom point of the triangle is exactly in the middle of the bottom edge of the square.)



3. Write a Racket expression placing a word (in blue) on a yellow rectangle inside a purple border (10 pixels wide). The word you choose should fit inside the yellow rectangle.



4. Write an expression that produces the top-right quarter of a solid ellipse 100 wide and 60 high. (That is, the final image should be 100 wide by 60 high.) (Hint: use one of the cropping functions.)



5. Write an expression, using *place-image*, to produce a solid blue rectangle 160 by 100 with a solid orange rectangle 60 by 40 whose bottom-left corner is at the center of the blue rectangle. (You may want to draw a picture on paper first and calculate the location for the orange rectangle.)

