

# Manipulating Surds

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# Try this

Decide if the following equations are true or false

$$\sqrt{9} + \sqrt{4} = \sqrt{13}$$

$$\sqrt{9} \times \sqrt{4} = \sqrt{36}$$

$$\sqrt{9} + \sqrt{9} = 2\sqrt{9}$$

$$2\sqrt{9} = \sqrt{36}$$

$$\sqrt{9} - \sqrt{4} = \sqrt{5}$$

$$\sqrt{4} \times \sqrt{4} = 4$$

$$\sqrt{\frac{9}{4}} = \frac{3}{4}$$



# Independent task

Decide if the following equations are true or false

$$\sqrt{3} + \sqrt{3} = \sqrt{6}$$

$$\sqrt{15} + \sqrt{8} = \sqrt{23}$$

$$\sqrt{18} - \sqrt{8} = \sqrt{10}$$

$$\sqrt{15} + \sqrt{15} = 2\sqrt{15}$$

$$\sqrt{8} \times \sqrt{8} = 8$$

$$\sqrt{5} \times \sqrt{3} = \sqrt{15}$$

$$\sqrt{15} \times \sqrt{10} = \sqrt{25}$$

$$2\sqrt{8} = \sqrt{16}$$

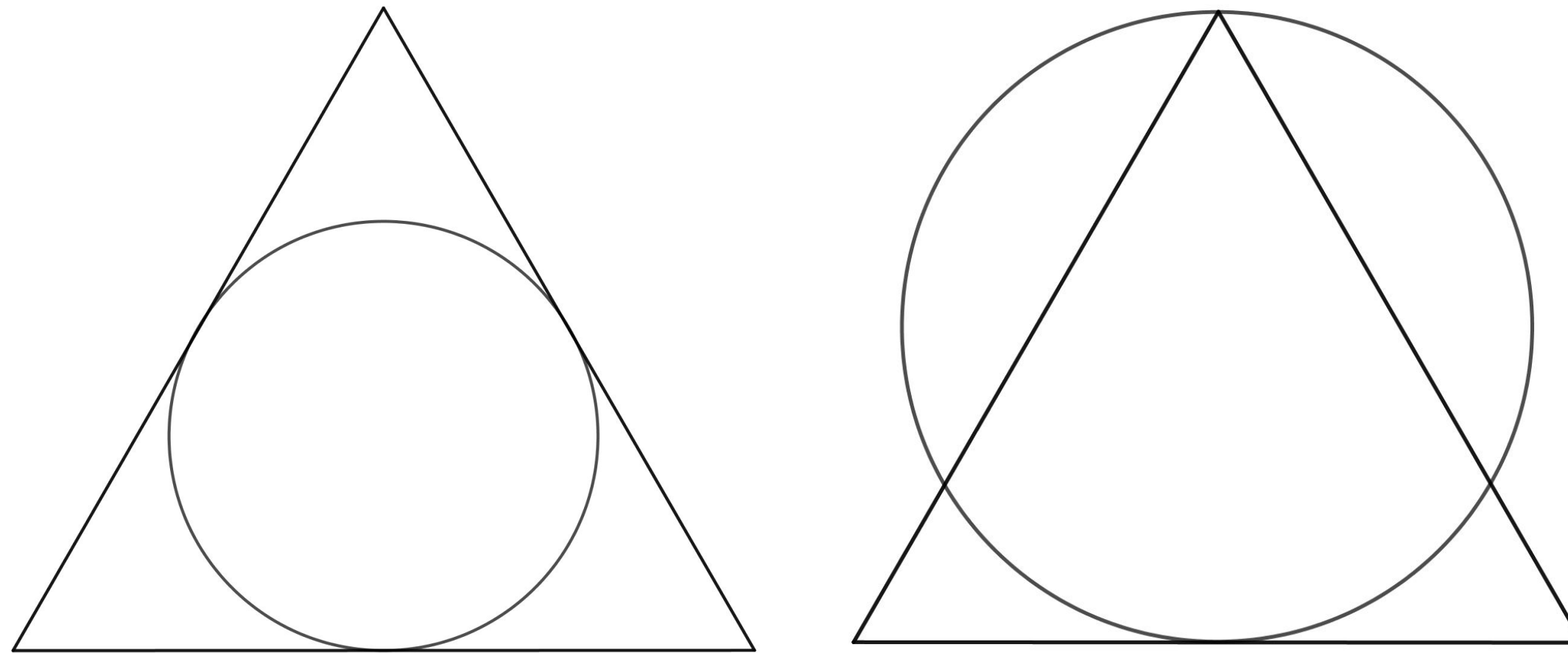
$$\sqrt{15} \div \sqrt{3} = \sqrt{5}$$

$$\sqrt{\frac{36}{64}} = \frac{3}{4}$$



# Explore

An equilateral triangle of side length 4 cm and a circle has been used to create the two images below. What are the areas of each circle?



Can you construct similar images?

