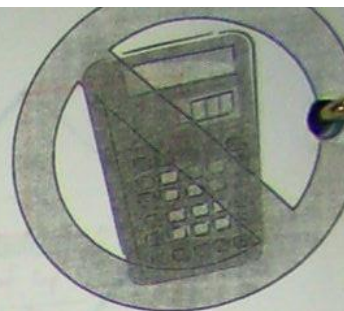


## Estimations of Irrational Numbers

### Notes:

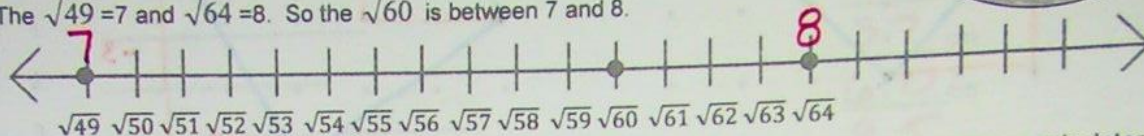
For the following assignment, do NOT use a calculator.



Example: Approximate  $\sqrt{60}$

What two consecutive perfect squares is 60 in between? 49 and 64

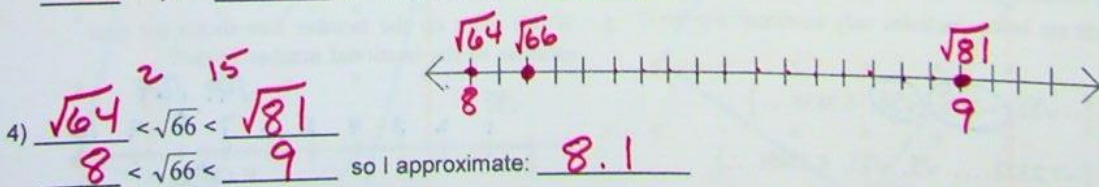
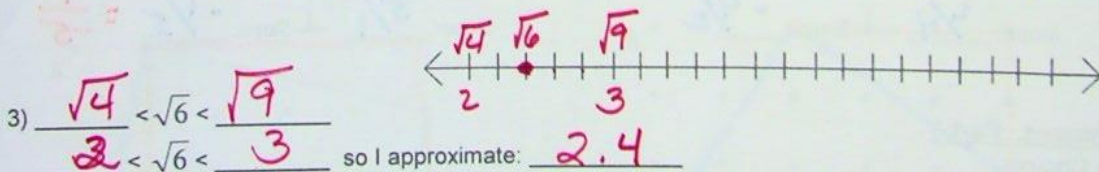
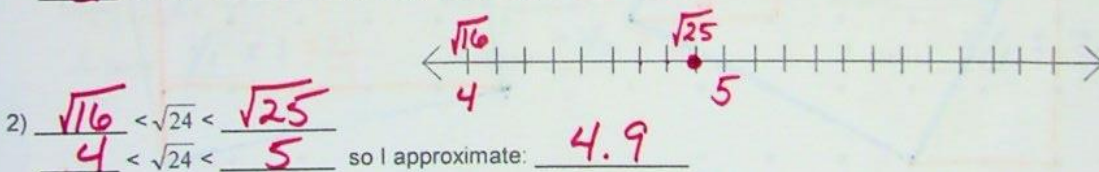
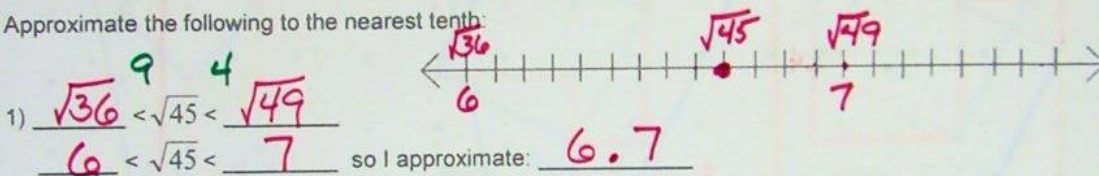
The  $\sqrt{49} = 7$  and  $\sqrt{64} = 8$ . So the  $\sqrt{60}$  is between 7 and 8.



Since 60 is closer to 64,  $\sqrt{60}$  will be closer to the 8. You might estimate 7.7 or 7.8. (If you use a calculator, you will find that  $\sqrt{60} \approx 7.74597$ ) That is a pretty close estimation.

$$\frac{\sqrt{49}}{7} < \sqrt{60} < \frac{\sqrt{64}}{8} \quad \text{so I approximate: } \underline{7.7}$$

Approximate the following to the nearest tenth:



Estimate the following square roots to the nearest tenth. You must show the two perfect squares that the number is between. NO CALCULATOR!!!

5)  $\frac{\sqrt{36}}{6} < \sqrt{38} < \frac{\sqrt{49}}{7}$   
6.2

6)  $\frac{\sqrt{81}}{9} < \sqrt{95} < \frac{\sqrt{100}}{10}$   
9.7

7)  $\frac{\sqrt{25}}{5} < \sqrt{31} < \frac{\sqrt{36}}{6}$   
5.6

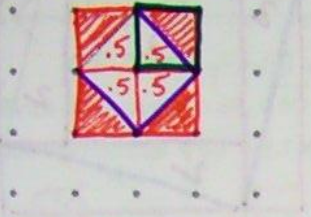
8)  $\frac{\sqrt{121}}{11} < \sqrt{128} < \frac{\sqrt{144}}{12}$   
11.3

Scotty #

# Finding the Areas of Squares Using Right Triangles & Rectangles

For each segment, draw a square, then use right triangles and rectangles to find the exact area of the tilted square. You must show your work as demonstrated.

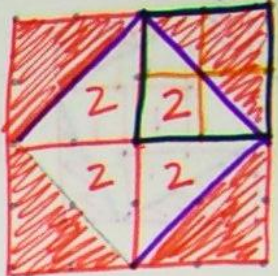
1. . . . . 2. . . . . 3.



Area of square =  $2\text{cm}^2$

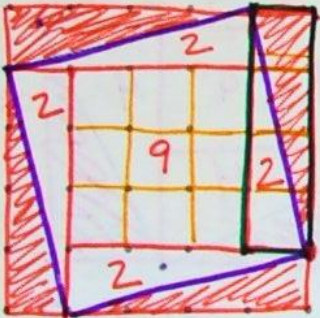


Area of square =  $5\text{cm}^2$



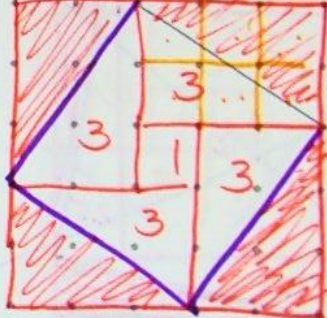
Area of square =  $8\text{cm}^2$

4.



Area of square =  $17\text{cm}^2$

5.



Area of square =  $13\text{cm}^2$