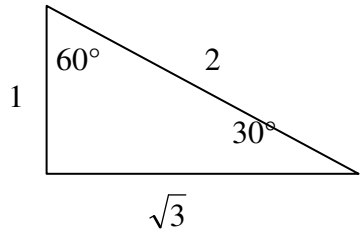
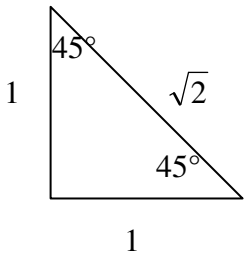
(8-4) Notes for Using Special Right Triangles

In Geometry there are two special right triangles (shown below).





These triangles are standards that allow us to solve similar triangles using ratios and proportions. In order to use these effectively we need to remember two things from previous lessons.

1) If we know that the acute angles in one right triangle are the same measure as the acute angles in another triangle, name the postulate that allows us to determine similarity.

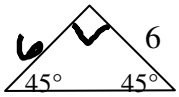
AA ~ postulate

2) If we know that two figures are similar, it allows us to know what two important facts about them?

∠'s are ≅

Sides are proportional

1)

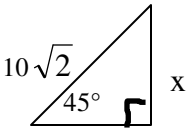


x

$\frac{6}{x} = \frac{1}{\sqrt{2}}$

$x = 6\sqrt{2}$

2)



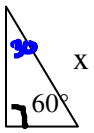
x

$\frac{x}{10\sqrt{2}} = \frac{1}{\sqrt{2}}$

$\sqrt{2}x = 10\sqrt{2}$

$x = 10$

3)

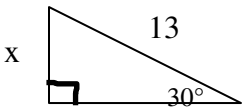


5

$\frac{x}{5} = \frac{2}{1}$

$x = 10$

4)

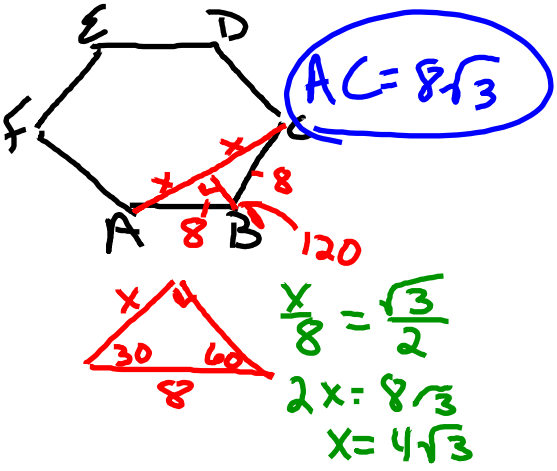


$\frac{x}{13} = \frac{1}{2}$

$2x = 13$

$x = 6.5$

5) In a regular hexagon ABCDEF, AB = 8. Find AD and AC



$AC = 8\sqrt{3}$

$\frac{x}{8} = \frac{\sqrt{3}}{2}$

$2x = 8\sqrt{3}$

$x = 4\sqrt{3}$

6) Express PQ, PS and QR in terms of a.