

Math 10 Quiz

/6

Name Taylor

1. Simplify. Give *exact* answers.

a)  $3\sqrt{12} + \sqrt{75}$

$$3(2\sqrt{3}) + 5\sqrt{3}$$

$$6\sqrt{3} + 5\sqrt{3}$$

$$11\sqrt{3}$$

b)  $2\sqrt{20} + 3\sqrt{252} - \sqrt{45} - 4\sqrt{28}$

$$2(2\sqrt{5}) + 3(6\sqrt{7}) - 3\sqrt{5} - 4(2\sqrt{7})$$

$$4\sqrt{5} + 18\sqrt{7} - 3\sqrt{5} - 8\sqrt{7}$$

$$\sqrt{5} + 10\sqrt{7}$$

2. Simplify. Give *exact* answers.

a)  $\frac{3}{3-\sqrt{6}} \cdot \frac{3+\sqrt{6}}{3+\sqrt{6}}$

$$= \frac{\cancel{3}(3+\sqrt{6})}{9-6}$$

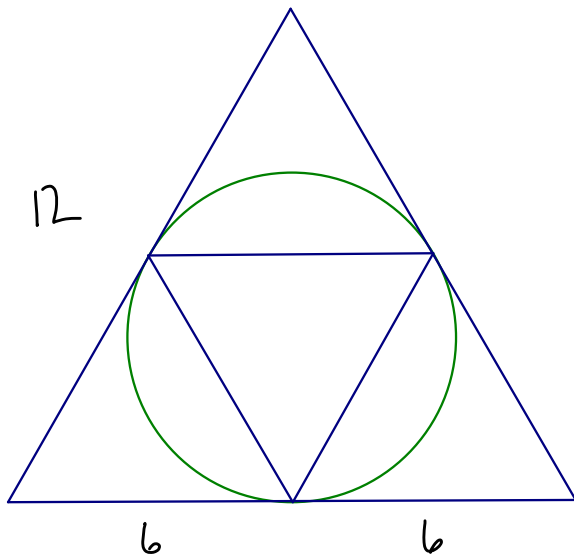
$$= 3 + \sqrt{6}$$

b)  $\frac{2+\sqrt{6}}{4+\sqrt{3}} \cdot \frac{4-\sqrt{3}}{4-\sqrt{3}}$

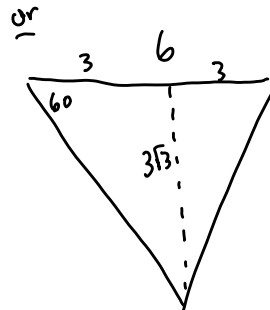
$$= \frac{8 - 2\sqrt{3} + 4\sqrt{6} - 3\sqrt{2}}{16 - 3}$$

$$= \frac{8 - 2\sqrt{3} + 4\sqrt{6} - 3\sqrt{2}}{13}$$

3. A small equilateral triangle is inscribed in a circle, which is itself inscribed in a large equilateral triangle. The side length of the large triangle is 12. What is the area of the small triangle?



$$A = \frac{s^2\sqrt{3}}{4} = \frac{36\sqrt{3}}{4} = 9\sqrt{3}$$



$$A = \frac{6(3\sqrt{3})}{2} = 9\sqrt{3}$$

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