1. (6 points) Find an expression in simplest form for the area and the perimeter of the shape below.

\[ \sqrt{10} + \sqrt{3} \]

\[ \sqrt{10} - \sqrt{3} \]

1. 

2. (6 points) Find an expression in simplest form for the area and the perimeter of the shape below.

\[ 3\sqrt{2} + \sqrt{3} \]

\[ 3\sqrt{2} + \sqrt{3} \]

2.
3. (6 points) Find the measure of the hypotenuse of the shape below in simplest form.

\[ \sqrt{15} + \sqrt{3} \]

\[ \sqrt{15} - \sqrt{3} \]

4. (4 points) Simplify:

\[ \sqrt[3]{(2x - 3)^3} - (\sqrt[3]{3x - 5})^5 + (\sqrt{x} + \sqrt{2})(\sqrt{x} - \sqrt{2}) \]

5. (5 points) Find the missing sides and missing angles of the right triangle given below.

\[ \begin{align*}
\text{Opposite} & = 18 \\
\text{Adjacent} & = ? \\
\text{Angle} & = 30^\circ
\end{align*} \]
6. (3 points) Rationalize the numerator: \( \frac{\sqrt{10x}}{2x} \)

7. (5 points) Find the missing sides and missing angles of the right triangle given below.

8. (3 points) Rationalize the numerator: \( \frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}} \)

9. (3 points) Solve: \( \sqrt{2x + 8} + 4 = 2 \)
10. (4 points) Find the missing sides and missing angles of the right triangle given below.

![Right Triangle Diagram]

11. Beginning Algebra Review Problems:
   (a) (2 points) Solve: \((3x + 2)(4x - 5) = 0\)

   (b) (3 points) Solve: \(12x^2 = 7x + 10\)