IM2 Ch.6 Review #3 **NAME:** **PER:**

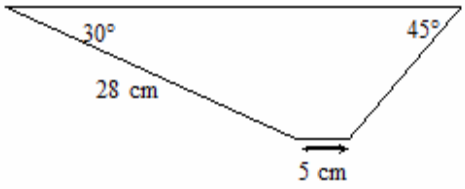
NO CALCULATOR. LEAVE ANSWERS IN EXACT FORM

1. Solve $x^2 - 8x - 20 = 0$ using all 3 methods:
   a. factor/zero product property b. complete the square c. quadratic formula

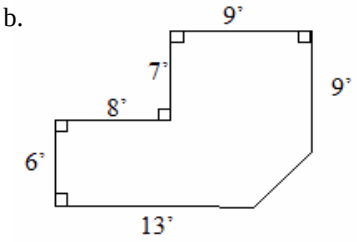
2. Solve $x^2 - 6x + 2 = 0$ using the specified method:
   a. factor/zero product property b. complete the square c. quadratic formula

3. Calculate the area and perimeter of each figure. CLEARLY show all steps!!

a.



b.

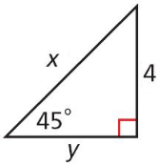


4. Change each expression to simplest radical form: a. $5\sqrt{90}$ b. $-3\sqrt{28}$

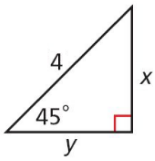
5. Rationalize each denominator and simplify: a. $\frac{4}{\sqrt{6}}$ b. $\frac{\sqrt{3}}{\sqrt{18}}$

6. Solve for the missing sides of each triangle. Show work for parts b and d.

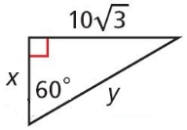
a.



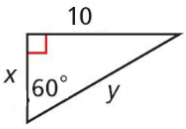
b.



c.



d.



7. Simplify, show all steps. Reminder: $i^2 = -1$
   a. $(4 + 3i) - (6 - 8i)$ b. $(3 - 4i)^2$ c. $(1 + 2i)^2$

8. Using Laws of Exponents, simplify each expression. Answers should include only positive exponents.
   a. $27^{\frac{2}{3}}$ b. $4^{\frac{1}{2}}$ c. 4^{-2} d. $4^{-\frac{1}{2}}$ e. $9^{-\frac{3}{2}}$ f. $(5x)(2x)^3$ g. $\frac{50x^{-8}}{10x}$ h. $\frac{5x^5}{10x^{-2}}$

CHECK: -2 -2 -2 2 4 9 10 10 10 10 20 157 $3 \pm \sqrt{7}$ $3 \pm \sqrt{7}$ $2\sqrt{2}$ $2\sqrt{2}$ $4\sqrt{2}$ $-6\sqrt{7}$ $15\sqrt{10}$ not factorable

-7-24i -3+4i -2+11i $40x^4$ $\frac{x^7}{2}$ $\frac{5}{x^9}$ $\frac{1}{2}$ $\frac{1}{16}$ $\frac{1}{27}$ $\frac{\sqrt{6}}{6}$ $\frac{2\sqrt{6}}{3}$ $\frac{10\sqrt{3}}{3}$ $\frac{20\sqrt{3}}{3}$ $52 + 4\sqrt{2}$ $168 + 98\sqrt{3}$ $52 + 14\sqrt{3} + 14\sqrt{2}$