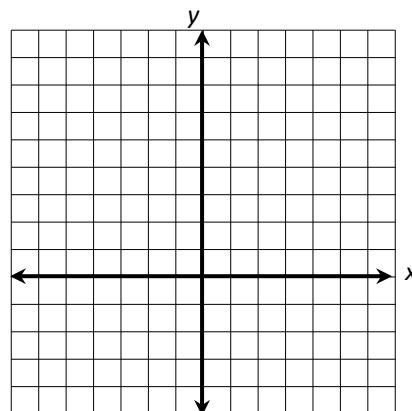


IM 2 Chapter 6 Review

Name _____ Date _____

NO CALCULATORS! Show your work!!

- 1) Sketch a graph of the parabola $y = x^2 - 6x + 8$. Graph and label the x- and y-intercepts, vertex, and line of symmetry. CLEARLY label and show your work.



x-intercepts: _____

y-intercept: _____ vertex: _____

- 2) Solve the equation below by Completing the Square and by using the Quadratic Formula. Write your answers in exact form. Simplify and reduce all answers.

$$x^2 + 10x + 2 = 0$$

$$x^2 + 10x + 2 = 0$$

- 3) Simplify. Show work below each problem. Do not use your calculator.

a) $4i(3i) =$ _____

b) $3x^2(-2x^4) =$ _____

c) $\frac{16x^4}{8x^{-3}} =$ _____

d) $(3x^2y^0)(4x^4y^{10}) =$ _____

e) $2 + 4i - (3 - 2i) =$ _____

f) $(2 - 5i)^2 =$ _____

g) $\sqrt{20} =$ _____

h) $2\sqrt{8} =$ _____

i) $\frac{3}{\sqrt{18}} =$ _____

j) $27^{\frac{2}{3}} =$ _____

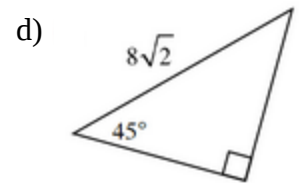
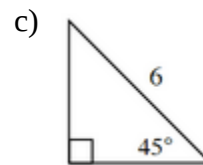
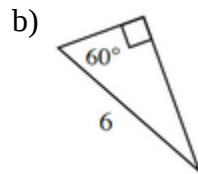
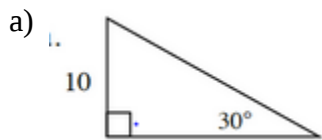
k) $81^{\frac{3}{4}} =$ _____

l) $(\sqrt[3]{2})^6 =$ _____

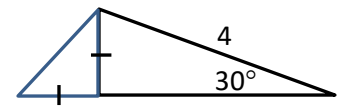
Check Answers: -12 4 9 27 $2x^7$ $-6x^6$ $12x^6y^{10}$ $-21-20i$ $-1+6i$ $2\sqrt{5}$ $4\sqrt{2}$ $-5 \pm \sqrt{23}$

$-5 \pm \sqrt{23}$ $\frac{\sqrt{2}}{2}$ (0,8) (2,0) (3,-1) (4,0)

4) Find the lengths of the missing sides. Leave all answers in simple radical form.



5) Find the area and perimeter of the figure at right. CLEARLY show your work.
Leave answers in exact form.



Area = _____ Perimeter = _____

6) Factor each of the following completely. Consider using the following methods: generic rectangles, greatest common factor, FOIL, and difference of squares.

a) $x^2 - 25$

b) $2x^2 + 36x$

c) $x^2 - x - 20$

d) $3x^3 + 12x^2 + 6x$

e) $2x^2 + 12x - 14$

f) $2x^2 - 13x - 15$

g) $x^2 - 11x + 18$

h) $x^2 + 7x - 8$

i) $4x^2 - 25$

j) $5x^3 - 20x$

k) $x^2 + 7x + 12$

l) $4x^2 + 16x + 15$

Check Answers:	3	8	8	20	$3\sqrt{2}$	$3\sqrt{2}$	$3\sqrt{3}$	$10\sqrt{3}$	$2 + 2\sqrt{3}$	$6 + 2\sqrt{2} + 2\sqrt{3}$	$(x-5)(x+4)$
	$(x-9)(x-2)$	$5x(x+2)(x-2)$	$(2x+5)(2x-5)$	$(x+5)(x-5)$	$2x(x+18)$	$(x-1)(x+8)$					
	$3x(x^2 + 4x + 2)$	$(2x+3)(2x+5)$	$(x+4)(x+3)$	$(2x-15)(x+1)$	$2(x-1)(x+7)$						