**Meramec Intermediate Algebra Quiz 9 Solution Summer 2009**

NAME: _____Score_____/10

Please **print** your name

**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

1. (3 pts) Calculate the distance between (3,5) and ( -2, -7)

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} = \sqrt{(3-(-2))^2 + (5-(-7))^2}$$

$$= \sqrt{(5)^2 + (12)^2} = \sqrt{25+144} = \sqrt{169} = 13$$

2. (3 pts) What is the midpoint of the line segment joining (3,5) and ( -2, -7)

$$\text{midpoint is } \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) = \left(\frac{3-2}{2}, \frac{5-7}{2}\right) = \left(\frac{1}{2}, -1\right)$$

3. (3 pts) Calculate the product (2 – 3i)(5 + 7i)

$(2 - 3i)(5 + 7i) = 10 + 14i - 15i - 21i^2 = 10 - i + 21 = 31 - i$

4. (1 pts) What is the conjugate of 7 – 9i

The conjugate of 7 – 9i is 7 + 9i