

MATH 221: Calculus and Analytic Geometry  
Prof. Ram, Fall 2006

HOMEWORK 1: SELECTED ANSWERS

Problem B. Computing with complex numbers

- (1)  $z = 0.$                       (2)  $x = 1.$                       (3)  $5 - 2i$
- (4)  $-19 + 8i$                       (5)  $32 + 4i$                       (6)  $-2.9 + 1.7i$
- (7)  $-9 - 46i$                       (8)  $\pm(1 + i)$                       (9)  $\frac{a}{a^2 + b^2} - \frac{b}{a^2 + b^2}i.$
- (10)  $10 - 3i$                       (11)  $2 + 4i$                       (12)  $14 - 8i$
- (13)  $\frac{11}{10} - \frac{4}{5}i$                       (14)  $1, i, -1, -i$                       (15)  $2, 2i, -2, -2i$
- (16)  $81 \left( \frac{1 + \sqrt{3}i}{2} \right), 531141 \left( \frac{1 - \sqrt{3}}{2} \right)$                       (17)  $2$
- (18)  $2, 6, 24, 120, 720$                       (17)  $2.71828182845904523536\dots$