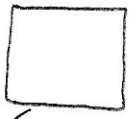
Name: Solution

MAC1105 Section 1A26
Quiz 5

Please show all of your work in a NEAT and ORGANIZED fashion.

1. (4 points) A square has an area that is numerically 9 more than twice its perimeter. What is the length of a side? (The side length is measured in centimeters.)



$A = s^2$
$P = 4s$

↳ s = side length (cm)

$A = 2(P) + 9$
$s^2 = 2(4s) + 9$
$s^2 = 8s + 9$
$s^2 - 8s - 9 = 0$
$(s-9)(s+1) = 0$
$s = 9, -1$ → length can't be negative

The length of a side is

9 centimeters.

2. (3 points) Write the complex number in standard form $a + bi$ and simplify any fractions completely.

$$\frac{20+\sqrt{-16}}{4} =$$

$$\frac{20+i\sqrt{16}}{4} =$$

$$\frac{20+4i}{4} =$$

$$\boxed{5+i}$$

3. (3 points) Multiply and write your answer in standard form.

$$(7+2i)^2 =$$
$$(7+2i)(7+2i) =$$
$$49 + 14i + 14i + 4i^2 =$$
$$49 + 14i + 14i - 4 =$$
$$\boxed{45 + 28i}$$