Math 5320, 1/12/18 Worksheet 3: More practice with ring homomorphisms and rings. Intro. to ideals.

1. Let R be a ring. Use the ring axioms to show that for any  $a \in R$ ,  $a \times 0 = 0$ . Hint: Consider a(0+1).

2. Let R a ring and I an ideal of R. If I contains 1, what dooes I have to be?

3. Show that the kernel of a homomorphism is an ideal.

Name: