

Homework:

Chapter 4: section 1. found near page 258.

1. Does 17 divide each of these numbers?
 - a) 68
 - b) 84
 - c) 357
 - d) 1001
2. Prove that if a is an integer other than 0, then
 - a) 1 divides a .
 - b) a divides 0.
3. Prove that part (ii) of [Theorem 1](#) is true.
4. Prove that part (iii) of [Theorem 1](#) is true.
13. What are the quotient and remainder when
 - a) 19 is divided by 7?
 - b) -111 is divided by 11?
 - c) 789 is divided by 23?
 - d) 1001 is divided by 13?
 - e) 0 is divided by 19?
 - f) 3 is divided by 5?
 - g) -1 is divided by 3?
 - h) 4 is divided by 1?

15. What time does a 12-hour clock read
- a) 80 hours after it reads 11:00?
 - b) 40 hours before it reads 12:00?
 - c) 100 hours after it reads 6:00?
16. What time does a 24-hour clock read
- a) 100 hours after it reads 2:00?
 - b) 45 hours before it reads 12:00?
 - c) 168 hours after it reads 19:00?
26. Evaluate these quantities.
- a) $-17 \bmod 2$
 - b) $144 \bmod 7$
 - c) $-101 \bmod 13$
 - d) $199 \bmod 19$
27. Evaluate these quantities.
- a) $13 \bmod 3$
 - b) $-97 \bmod 11$
 - c) $155 \bmod 19$
 - d) $-221 \bmod 23$

34. Decide whether each of these integers is congruent to 3 modulo 7.

a) 37

b) 66

c) -17

d) -67

35. Decide whether each of these integers is congruent to 5 modulo 17.

a) 80

b) 103

c) -29

d) -122