

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)** $-17 \text{ mod } 2$
 - b)** $144 \text{ mod } 7$
 - c)** $-101 \text{ mod } 13$
 - d)** $199 \text{ mod } 19$
- 27.** Evaluate these quantities.
- a)** $13 \text{ mod } 3$
 - b)** $-97 \text{ mod } 11$
 - c)** $155 \text{ mod } 19$
 - d)** $-221 \text{ mod } 23$

- 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