

**DISCRETE MATH - FALL 2017**  
**HOMEWORK 1**

- (1) Textbook problem 3.5.
- (2) Define parallel lines on plane.
- (3) Check if the following numbers are even/odd/prime/composite. Give explanation for your answer.
  - (a) 0.
  - (b) 1.
  - (c) 7.
- (4) Textbook 4.5.
- (5) Textbook 4.6.
- (6) Which of the following statement is correct? Explain
  - (a) If  $1 = -1$  then  $1^2 = (-1)^2$ .
  - (b) If  $1^2 = (-1)^2$  then  $1 = -1$ .
- (7) Textbook 5.6.
- (8) Textbook 5.15.
- (9) Let  $a$  be an integer. Show that  $2|a^2$  iff  $4|a^2$ . *Hint for "only if": consider two cases where  $a$  is even or odd.*

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