

QUIZ NUMBER FOUR MTH213 SPRING007

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Name \_\_\_\_\_, Id. Num. \_\_\_\_\_, Score  $\overline{15}$   
write down T or F

- QUESTION 1.** (1) If  $|A| = 6$  and  $|B| = 8$ , then there is a one-to-one function from  $A$  into  $B$  that is not onto.
- (2) If  $|A| = 7$  and  $|B| = 5$ , then there is an onto function from  $A$  into  $B$  that is not one-to-one
- (3) If  $f(x) = \sqrt{x-3}$  and  $g(x) = x^2 + 3$ , then  $(g \circ f)(x) = x$  for every  $x \in \mathbb{R}$ .
- (4) Let  $f(x) = 2x^2 + 1$  and  $k(x) = \sqrt{x+1}$ . Then the domain of  $(f \circ k)(x)$  is  $[-1, \infty)$ .
- (5) Let  $f : \mathbb{R} \rightarrow [0, 3]$  such that  $f(x) = \frac{3}{x^2+1}$ . Then  $f(x)$  is onto.
- (6) Let  $f : [0, \infty) \rightarrow [1, \infty)$  such that  $f(x) = x^4 + 1$ . Then  $f(x)$  is one to one and ONTO.
- (7) If  $|A| = 16$  and  $|B| = 16$  and  $f(x)$  is an onto from  $A$  to  $B$ , then  $f(x)$  is one to one.
- (8) If the domain of  $f(x)$  has exactly 14 elements and  $f \circ k$  is defined, the the range of  $k$  has at most 14 elements.

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