

QUIZ NUMBER TWO FOR MTH 213

AYMAN BADAWI

Name _____, Id. Num. _____, Score $\frac{\quad}{10}$

QUESTION 1. (write down T or F) Let $Q(x, y) : xy \leq 4, x \in R$ and $y \in Z^+$.
(BE CAREFUL!!!)

- a) $\exists x \forall y Q(x, y)$
- b) $\forall x \exists y Q(x, y)$
- c) $\forall y \exists x Q(x, y)$
- d) $\exists y Q(5, y)$
- e) $\exists! y Q(4, y)$

QUESTION 2. Let $Q(x, y)$ be "x and y have the same birthday." Where x is any female and y any male. USE QUANTIFICATIONS to rewrite the following.

- 1) There is a male whom has the same birthday as Linda.
- 2) There are exactly two females whom have the same birthday as MIKE.
- 3) Not every male has the same birthday as SUSAN.
- 4) There is a female and there is a male with different birthday.
- 5) Many girls have the same birthday as Mike.

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