

Algebra 201-007-50 C2

Quiz 9

November 5, 2008

Name: SOLUTIONS

Student ID: _____

1. (5 marks). The sum of 2 numbers is 14 and their product is 45. Find them.

LET x AND y BE THE NUMBERS

$$x + y = 14 \Rightarrow y = 14 - x$$

$$x \cdot y = 45$$

$$x \cdot (14 - x) = 45$$

$$14x - x^2 = 45$$

$$0 = x^2 - 14x + 45$$

$$0 = (x - 5)(x - 9)$$

↙

$$x = 5$$

↘

$$x = 9$$

IF $x = 5$ THEN $y = 14 - 5 = 9$

IF $x = 9$ THEN $y = 14 - 9 = 5$

1

∴ THE TWO NUMBERS ARE 5 AND 9

2. (5 marks). Divide and simplify:

$$\frac{x^2 - 3x - 10}{x^2 - 5x} \div \frac{x^2 - 4}{x^2 - 2x}$$

$$= \frac{x^2 - 3x - 10}{x^2 - 5x} \cdot \frac{x^2 - 2x}{x^2 - 4} = \frac{(x-5)(x+2)}{x(x-5)} \cdot \frac{x(x-2)}{(x+2)(x-2)}$$

$$= \underline{1}$$