MTH 23.5 LECTURE NOTES (Ojakian)

Topic 7: Algebra - Evaluation

OUTLINE

References (**Algebra Book**: pages 40 - 42; **Statistics Book**: None)

1. Algebra
2. Evaluating Algebraic Expressions

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1. Algebra?

Question. *What is Algebra?*

For now, just have algebraic expressions, and want to be able to substitute

Example: Convert from Celsius to Fahrenheit

PROBLEM 1. *Convert* 10° *Celsius to Fahrenheit using the verbal procedure.*

(a) Verbally:

i. Multiply the Celsius temperature by $\frac{9}{5}$

ii. Then add 32

(b) With "algebraic expression": $C \cdot \frac{9}{5} + 32$

(c) Advantages of algebraic expression

i. More concise

ii. Have mathematical rules for working with algebraic expressions

(d)

PROBLEM 2. *Convert* 10° *Celsius to Fahrenheit using the formula.*

(e) Recall area of rectangle and triangle. Write using algebra and do some examples.

2. Evaluating algebraic expressions

(a) Plug in the given numbers for the variables

(b) Evaluate and simplify

PROBLEM 3.

i. $4x$ *if* $x = 2$

ii. $4x$ *if* $x = 3$

iii. $4x$ *if* $x = -3$

iv. $2a + b$ *if* $a = 1,\ b = 1$

v. $2a + b$ *if* $a = -1,\ b = -2$

vi. x^2 *if* $x = 4$

vii. x^2 *if* $x = -4$

viii. x^3 *if* $x = -4$

ix. $x^2 + y^2$ *if* $x = 3,\ y = 1$

x. $x^2 - y^2 + 2$ *if* $x = -7,\ y = 0$