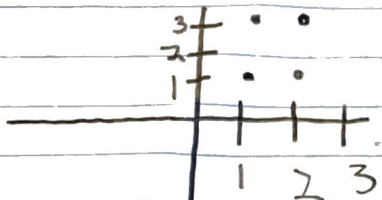Math 290 HW 2

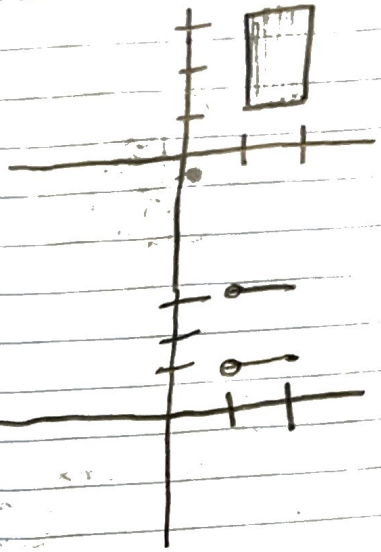
Ben Finan

E 2.1

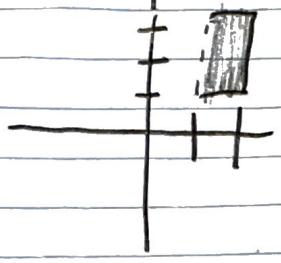
a)



b)



c)



d)

E 2.2.

a) $A \times B = \{(5,0), (7,0), (5,9), (7,9), (5,7), (7,7)\}$

b) $B \times A = \{(0,5), (9,5), (7,5), (0,7), (9,7), (7,7)\}$

c) $A^2 = \{(5,5), (5,7), (7,5), (7,7)\}$

d) $B^2 = \{(0,0), (0,9), (0,7), (9,0), (9,7), (9,9), (7,0), (7,9), (7,7)\}$

e) $\emptyset \times A = \{\}$

E 2.3

a) False, $|A \times B| = 12$. You find the cardinality of the product of two sets by multiplying each sets cardinality together.

b) False, order matters when finding the Cartesian product of sets

*c) True, since the union of S_i sets will always contain S_i

*d) True

e) False, there would be ordered quadruples

Math 290 Hw 2 Contd.

E 2.4

a. $S = \{a, w, x, y\}$

$\bigcap_{a \in S} W_a$

B. $\underline{g = \{s, t, u\}}$

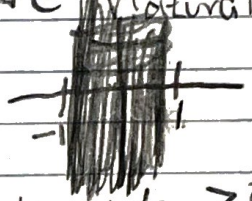
$\bigcup_{a \in S} W_a$

★C. $\underline{V = \{a, e, i, o, u\}}$

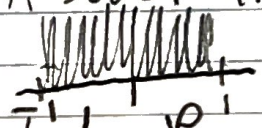
$\bigcup_{a \in \{P, r\}} W_a \bigcap_{a \in V} W_a$

E 2.5

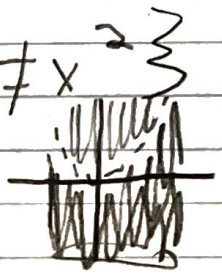
a. A set of all parabolas that are natural numbers within the interval -1 to 1,



b. A set of all Parabolas with y-int > 0 within -1 to 1



C. $\bigcup_{r \neq 0} P_r' = \{(x, y) \in R : y \neq x^2\}$



★d. $\{\}$

★e. $\{\}$