Kermit and Miss Piggy are back to arguing over what each should get in their breakup.

(1) **Adjusted Winner** Given the points below, settle the argument with the Adjusted Winner Method. Clearly state who gets what items, and which item gets shared. For the shared item, state what percentage each person gets.

	Miss Piggy	Kermit	Point Ratios
Banjo	10	40 ✗	$\frac{40}{10} = 4$
Diamond Necklace	70 ✗	20	$\frac{70}{20} = 3.5$
Lily Pad	0	40 ✗	$\frac{40}{0}$ undefined
Purple Karate Belt	20 ✗	0	$\frac{20}{0}$ undefined

need to share necklace.

$$80 + 20x = 20 + (1-x) \cdot 70$$
$$80 + 20x = 20 + 70 - 70x$$
$$90x = 10$$
$$x = \frac{1}{9} = .11$$

Kermit receives the Banjo, the Lily Pad, and 11% of the necklace.
Miss Piggy receives the Karate Belt and 89% of the necklace.

(2) **Knaster's and Equitability Procedures** The bids placed (in dollars) are as follows:

	Miss Piggy	Kermit
Banjo	100	450 ✗
Diamond Necklace	700 ✗	200
Lily Pad	20	400 ✗
Purple Karate Belt	200 ✗	10

$b_{mp} = 1020$ $b_k = 1060$

Fill in the chart below.

	Miss Piggy	Kermit	
Fair Share	510	530	
Value of Item Received	900	850	Surplus ↓
Money Received	−390	−320	−710

(a) Using Knaster's Procedure, who gets which items, and what are $x_{MissPiggy}$ and x_{Kermit}?

Kermit gets Banjo & Lily Pad, Miss Piggy gets Diamond Necklace and Purple Karate Belt.

$$x_{MissPiggy} = 510 + \frac{710}{2} = 865$$
$$x_{Kermit} = 530 + \frac{710}{2} = 885$$

(b) Using the Equitability Procedure, who gets which items, and what are $x_{MissPiggy}$ and x_{Kermit}? Kermit gets Banjo & Lily Pad, Miss Piggy gets Necklace and Karate Belt.

$$X_{MissPiggy} = 510 + \frac{1020}{2080}(710) = \$858.17$$

$$X_{Kermit} = 530 + \frac{1060}{2080}(710) = \$891.83$$

(c) Using the Equitability Procedure results, find the X/B fractions for Miss Piggy and Kermit.

$$X/B_{MP} = \frac{858.17}{1020} = .84$$

$$X/B_{K} = \frac{891.83}{1060} = .84$$

(d) In this scenario, what are the following values?

(i) N $\boxed{2}$

(ii) $b_{MissPiggy}$ $\boxed{\$1020}$

(iii) m $\quad \frac{1020 + 1060}{2} = \boxed{1040}$

(iv) w $\quad 450 + 700 + 400 + 200 = \boxed{1750}$