Compensation Worksheet #2
October 22, 2018
2 Points

Circle one name.

Name: _Solutions_ Name: _____ Name: _____

Brian, Stewart and Peter work for Acme Incorporated, which is getting some new office supplies this month. The boss (their uncle) decides that the three of them can have the old equipment as long as they agree to share it equally between them. They use Knaster's method of sealed bids, with the bids shown below. Round to the nearest penny when needed.

	Brian	Stewart	Peter
cabinet	$60	$65	$80
desk	$35	$30	$40
printer	$90	$70	$50
copier	$200	$220	$200

1. How much is a fair share, according to Brian? (Find how much the goods are worth to Brian, and then divide by 3, the number of people.) $\frac{60+35+90+200}{3} = \frac{385}{3} = \$128.33$

2. Which goods will Brian get, if any? (Which is he the highest bidder on?) _Printer_

3. How much cash will Brian pay or receive in the first settlement? (What cash should he receive or pay in order to have EXACTLY his fair share?) $128.33 - \$90 = $ receive $\$38.33$ (printer value)

4. How much is a fair share according to Stewart? $\frac{65+30+70+200}{3} = \frac{385}{3} = \$128.33$

5. Which goods will Stewart get, if any? _Copier_

6. How much cash will Stewart pay or receive in the first settlement? $128.33 - 220 = $ pay 91.67 copier value

7. How much is a fair share according to Peter? $\frac{80+40+50+200}{3} = \frac{370}{3} = \$123.33$

8. Which goods will Peter get, if any? _Cabinet and Desk_

9. How much cash will Peter pay or receive in the first settlement? $123.33 - 80 - 40 = $ receive $\$3.33$

10. What is the surplus? (Find the difference between the total amount paid out and the total amount received in the first settlement: lines 3, 6 and 9 above.) $-38.33 + 91.67 - 3.33 = \$50.01$
   ✱ Switch signs of first settlement

11. Divide the surplus by three and award it to each person. Then write out the final settlement below. (You'll have one sentence for each person: Brian receives [items] and pays/receives [cash]; etc.)

$\frac{\$50.01}{3} = \$16.67$

Brian: $38.33 + 16.67 = \$55$
Stewart: $-91.67 + 16.67 = -\$75$
Peter: $3.33 + 16.67 = \$20$

Brian receives the Printer and receives $55.
Stewart receives the copier and pays $75.
Peter receives the Cabinet and Desk and receives $20.

Compensation Table

person	bid total b	fair share	items	items value	1st $	surplus	final $	comp x
Brian	$385 (60+35+90+200)	$\frac{385}{3}$ = $128.33	Printer	$90	128.33−90= $38.33	+$16.67	$55 (38.33+16.67)	$145 (90+55)
Stewart	$385 (65+30+70+220)	$\frac{385}{3}$ = $128.33	Copier	$220	128.33−220= −$91.67	+$16.67	~~$75~~ (−91.67+16.67)	$145 (220−75)
Peter	$370 (80+40+50+200)	$\frac{370}{3}$ = $123.33	Cabinet, Desk	$120 (80+40)	123.33−100= $3.33	+$16.67	$20 (3.33+16.67)	$140 (120+20)

Money in and out of pot:

Switch signs of 1st $ → −38.33 + 91.67 − 3.33 = $50.01

Net total surplus in pot:
$50.01

Surplus per person:

$\frac{\$50.01}{3}$ = $16.67