

Exercise 13-5 (30 minutes)

1.	<i>A</i>	<i>B</i>	<i>C</i>
(1) Contribution margin per unit.....	\$54	\$108	\$60
(2) Direct material cost per unit	\$24	\$72	\$32
(3) Direct material cost per pound.....	\$8	\$8	\$8
(4) Pounds of material required per unit (2) ÷ (3).	3	9	4
(5) Contribution margin per pound (1) ÷ (4)	\$18	\$12	\$15

2. The company should concentrate its available material on product A:

	<i>A</i>	<i>B</i>	<i>C</i>
Contribution margin per pound (above)..	\$ 18	\$ 12	\$ 15
Pounds of material available.....	<u>× 5,000</u>	<u>× 5,000</u>	<u>× 5,000</u>
Total contribution margin.....	<u>\$90,000</u>	<u>\$60,000</u>	<u>\$75,000</u>

Although product A has the lowest contribution margin per unit and the second lowest contribution margin ratio, it is preferred over the other two products because it has the greatest amount of contribution margin per pound of material, and material is the company's constrained resource.

3. The price Barlow Company would be willing to pay per pound for additional raw materials depends on how the materials would be used. If there are unfilled orders for all of the products, Barlow would presumably use the additional raw materials to make more of product A. Each pound of raw materials used in product A generates \$18 of contribution margin over and above the usual cost of raw materials. Therefore, Barlow should be willing to pay up to \$26 per pound (\$8 usual price plus \$18 contribution margin per pound) for the additional raw material, but would of course prefer to pay far less. The upper limit of \$26 per pound to manufacture more product A signals to managers how valuable additional raw materials are to the company.

If all of the orders for product A have been filled, Barlow Company would then use additional raw materials to manufacture product C. The company should be willing to pay up to \$23 per pound (\$8 usual price plus \$15 contribution margin per pound) for the additional raw materials to manufacture more product C, and up to \$20 per pound (\$8 usual price plus \$12 contribution margin per pound) to manufacture more product B if all of the orders for product C have been filled as well.