

Short Answer Key
Cookie Dough Kits

1. a) \$5
b) \$10
c) $p = 5x + 10y$

2. a) $7x + 15y \leq 2100$
b) $x + y \leq 220$
c) $x \geq 0$
d) $y \geq 0$

e) $7x + 15y \leq 0$
 $x + y \leq 0$
 $x \geq 0$
 $y \geq 0$
f) feasible; yes, by reversing the direction of all four inequality arrows. See TI 83+ user manual for instructions on graphing inequalities or use their inequality program available for download. You may want to experiment with the Window Settings and/or Zoom functions with your students to obtain a good picture of this system of inequalities.

3. a) answers vary; discuss with class
b) answers vary
c) Your profit if you sell x number of Family times kits and y number of Baker's Delight Kits
d) answers vary
e) answers vary
g) Some students may find the optimum value immediately, some may not. That the students search and evaluate their search results is what is important in this section.
h) Open ended question at this level. Answers may vary.
i) The results show how many kits (of each type) the students should buy and resell to make the greatest profit.
j) Because you can't sell parts (fractional values) of a kit.

4. a) $y = (p-5x)/10$ or $y = -0.5x + p/10$
b) -0.5
algebraic expression: $p/10$
c) task
d) task
e) They are parallel lines. The line representing an \$1100 profit has a greater value for its y-intercept.

f) They are all parallel. However, note that when $p=1500$ the line no longer intersect the feasible region.

g) student answers may vary. Guide the students towards seeing that the point will be on a corner of the feasible region.

h) (150, 70)

i) $p = 5(150) + 10(70) = 1450$; the maximum value represents the greatest possible profit your club can make. This profit is \$1450. The coordinates (150,70) represent the fact that to obtain the greatest profit your club should buy and resell 150 Family times kits and 70 Baker's Delight kits.

5. The extensions section is left for you to explore.