

* Over Budget

Cats	Dogs	Start-up Cost
33	7	\$1616
40	2	\$1440
26	4	\$1492
11	19	\$1872

Rules: $32c + 80d > 1280$

* Under Budget

Cats	Dogs	Start-up Cost
2	3	304
1	1	112
3	3	336
5	10	920
15	5	980

Rules: $32x + 80y < 1280$

* Exactly \$1280

Cats	Dogs	Start-up Cost
40	0	1280
33	4	1280
15	12	1280
10	12	1280
5	14	1280
0	16	1280

constant rate

Exactly \$1280 Equivalent

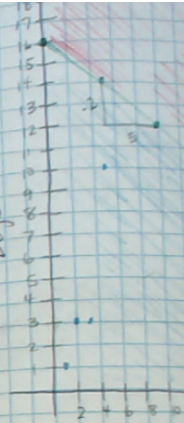
$20 = 33 = 2.5$ rate
 $2.5 \times 2 = 5$

Replace 5 cats with 2 dogs

Equation: $32x + 80y = 1280$
 where $x = \text{cats}$, $y = \text{dogs}$
 total cost of pens

Constant Rate of Change when Replace Cats w/ dogs

Dogs



Viable

← Reasonable, make sense in the context

The viable solutions for the start up cost are in the blue/green areas but are natural numbers
 * only positive whole numbers

Standard Form

$32x + 80y = 1280$

$-32x \quad -32x$

$80y = -32x + 1280$

$y = -\frac{2}{5}x + 16$

graph line

Slope-Intercept

$y = -\frac{2}{5}x + 16$

↪ exchange rate

$m = -\frac{2}{5}$

$b = 16$

Graphing using Intercepts

$32x + 80y = 1280$

(16, 0)

$32x + 80(0) = 1280$

$32x = 1280$

$x = 40$

y intercept

(0, 16)

$32(0) + 80y = 1280$

$80y = 1280$

$y = 16$

Space Limitation

Over Space
 $6c + 24d > 360$
 total space used

20
 14 → NO! over in space cost
 12.0

Exactly \$1280

Dogs	Start up cost
0	1280
4	1280
8	1280
12	1280
16	1280

Discrete points
 (dms)

inserts Rate of Change, Slope
 Repair Costs w/ 2dops

text

USING Intercepts
 $20y = 1280$

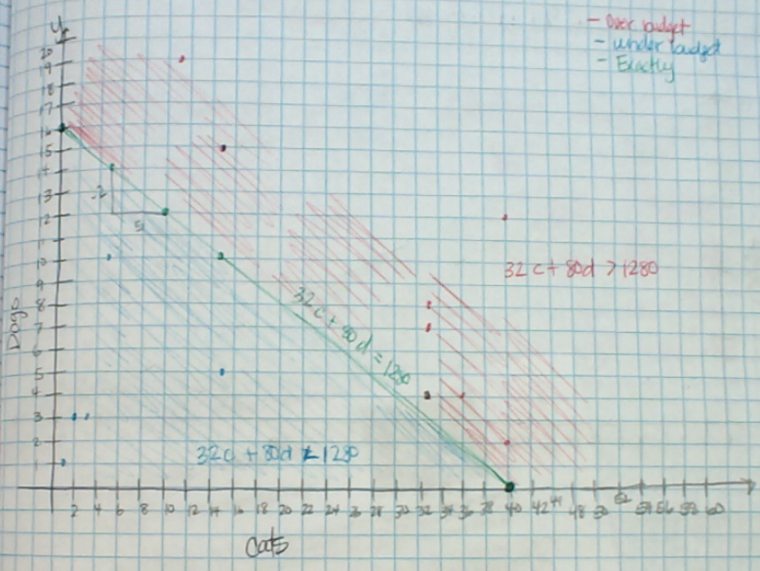
$(0, 64)$
 $(64, 0)$
 $(0, 128)$
 $(128, 0)$

Space Limitation = 360 ft² total
 dog pens : 24 ft²
 cat pens : 6 ft²

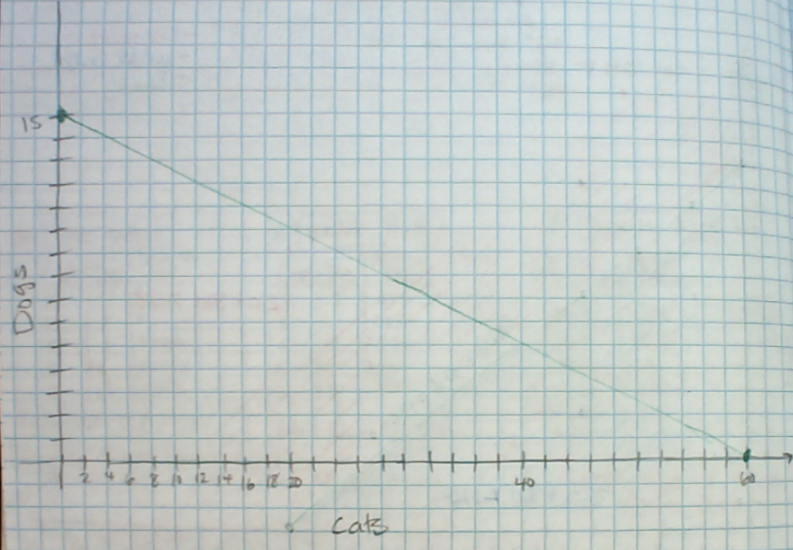
Over Space
 $6c + 24d > 360$
 total space used

Under Space
 $6c + 24d < 360$

Exact Space
 $6c + 24d = 360$
 x int (60, 0)
 y int (0, 15)



$\frac{1280}{80} = 16$



5.4 Pampering & P
 SKILLS: use the
 to gra

SPACE:
Carlos Equation

4
 4
 4
 4

Step

each dog. Carlos can spend a total of \$100 on food and water for 4 dogs per day for each cat. He needs the middle of the year off in March each day for the morning and evening meetings, but
 Pampering Time: The team plans to spend 15 minutes each day feeding and petting each cat and
 20 minutes each day pampering each dog. Carlos cannot spend more than \$100 on the morning for
 each day to pamper and play with the pet.
 Write inequalities for each of these additional time constraints. Shade the solution set for
 each constraint on separate coordinate grids.