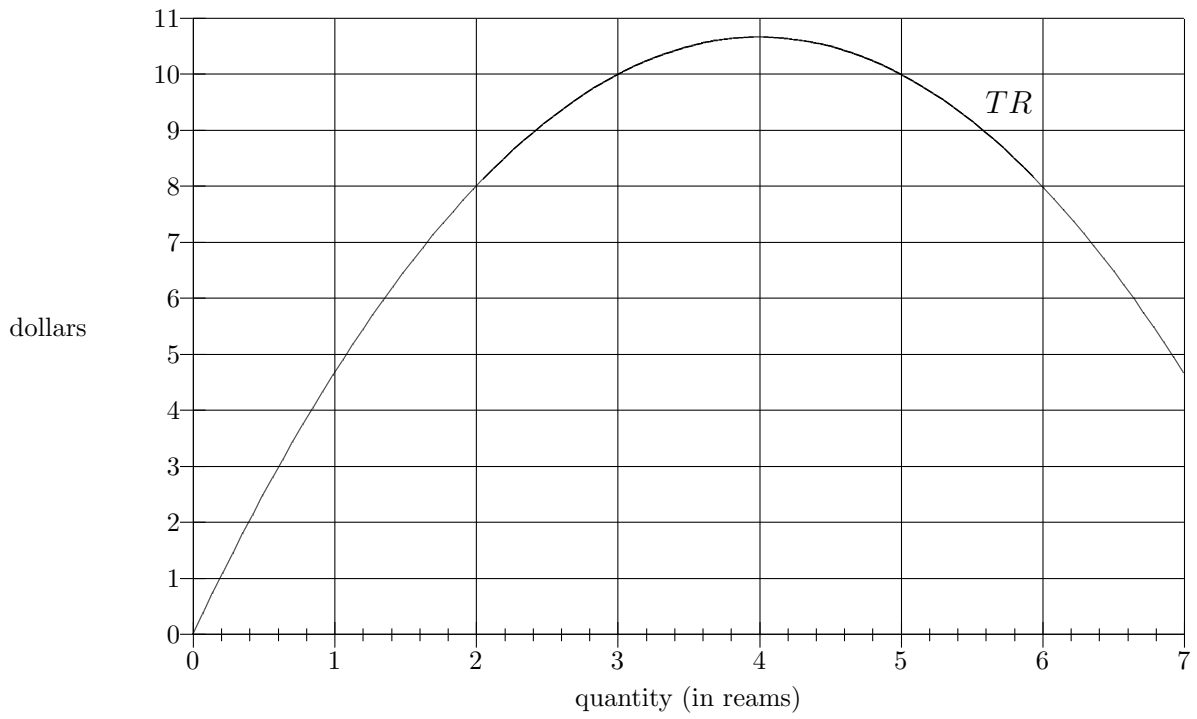
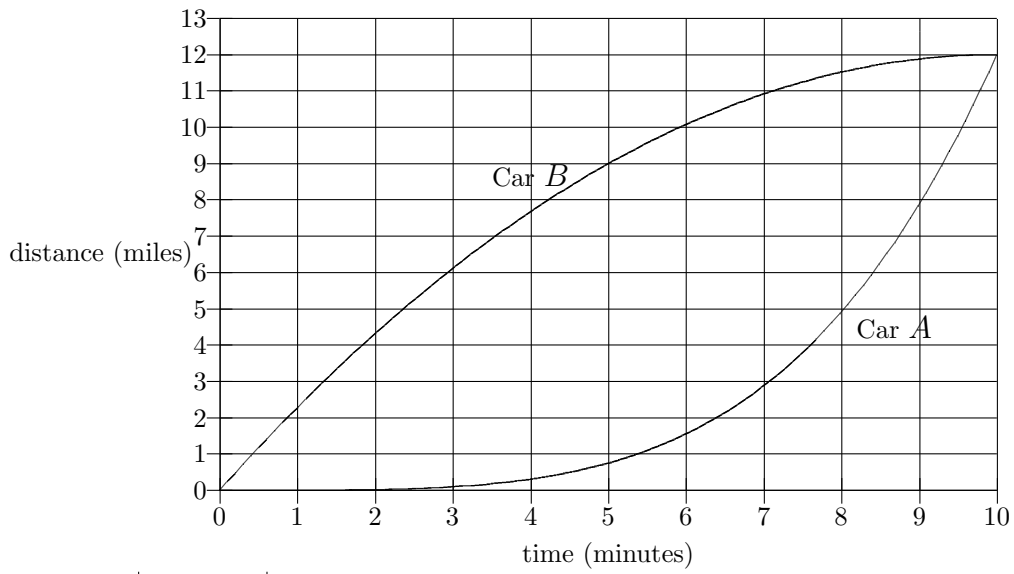


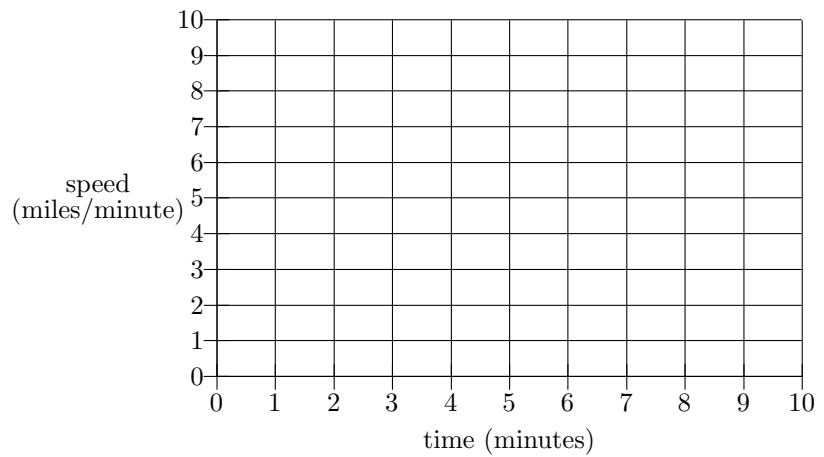
MATH 112
Lecture to Accompany Worksheet 2



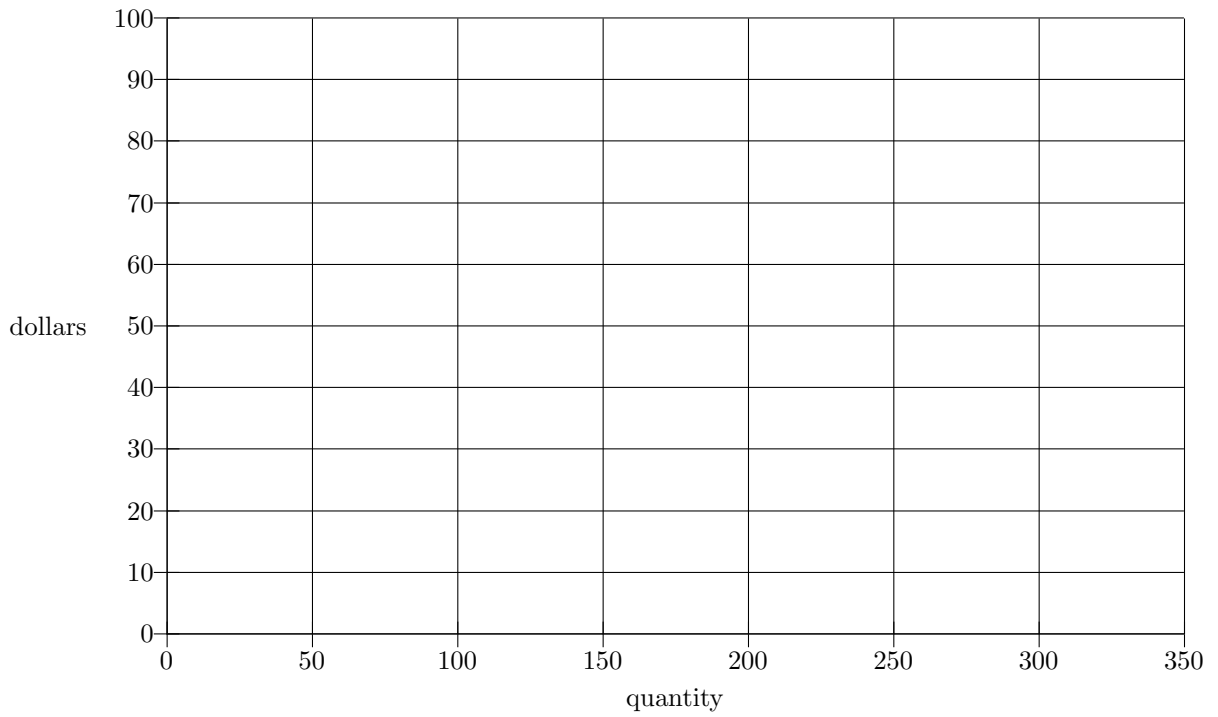
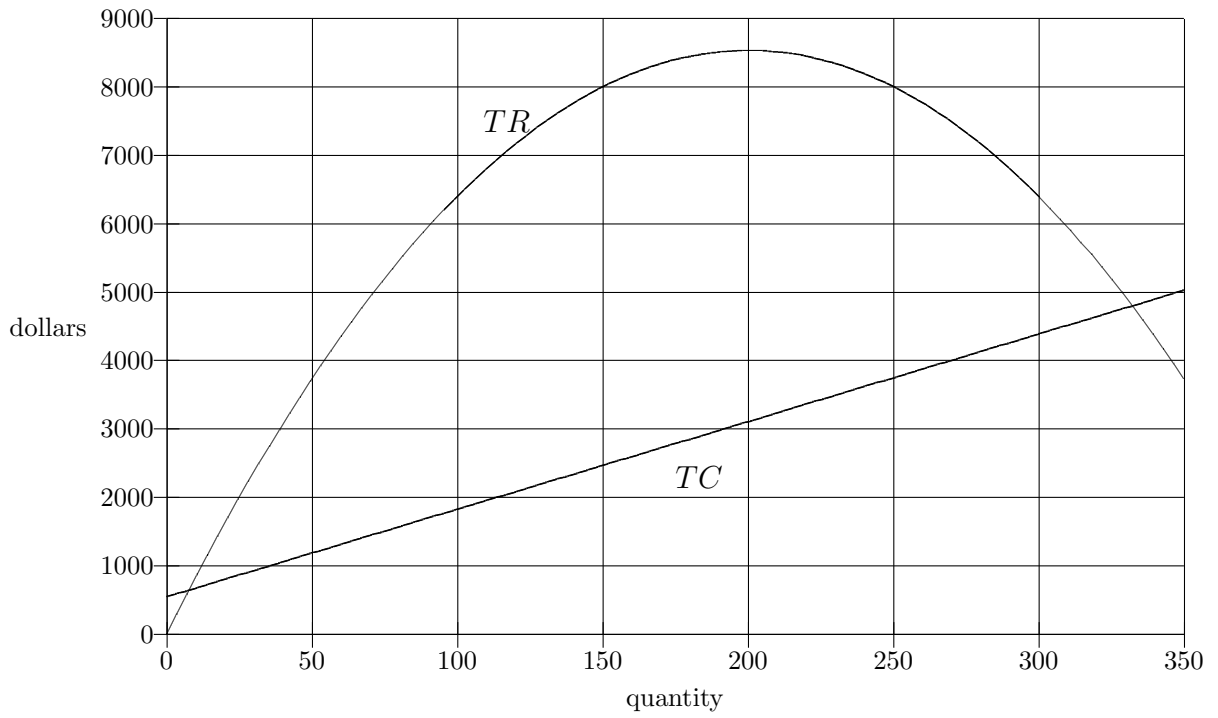
MATH 112
Lecture to Accompany Worksheet 4



t	car A's speed	car B's speed
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

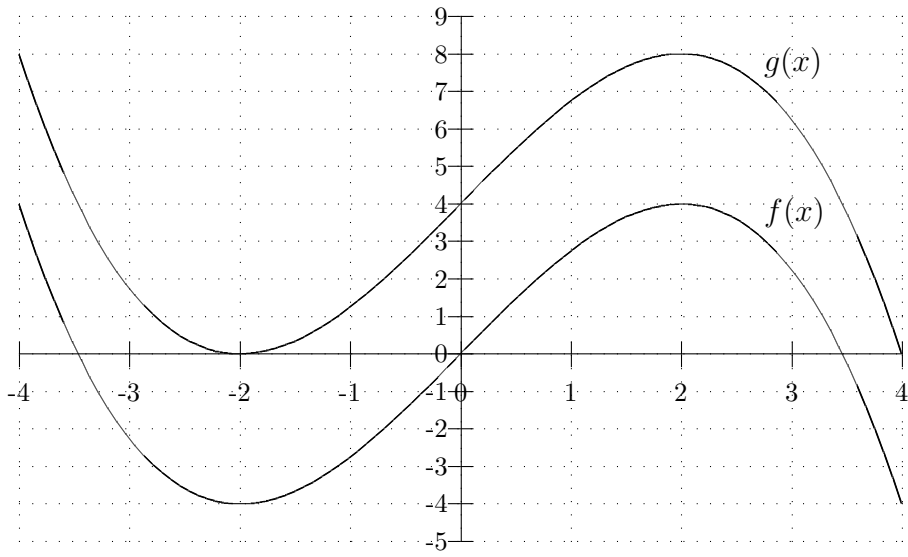


MATH 112
Lecture to Accompany Worksheet 5

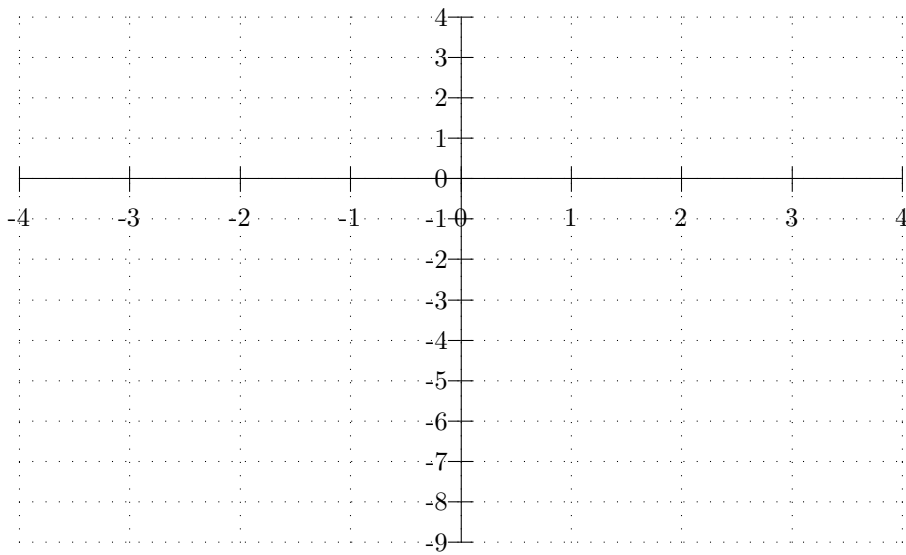


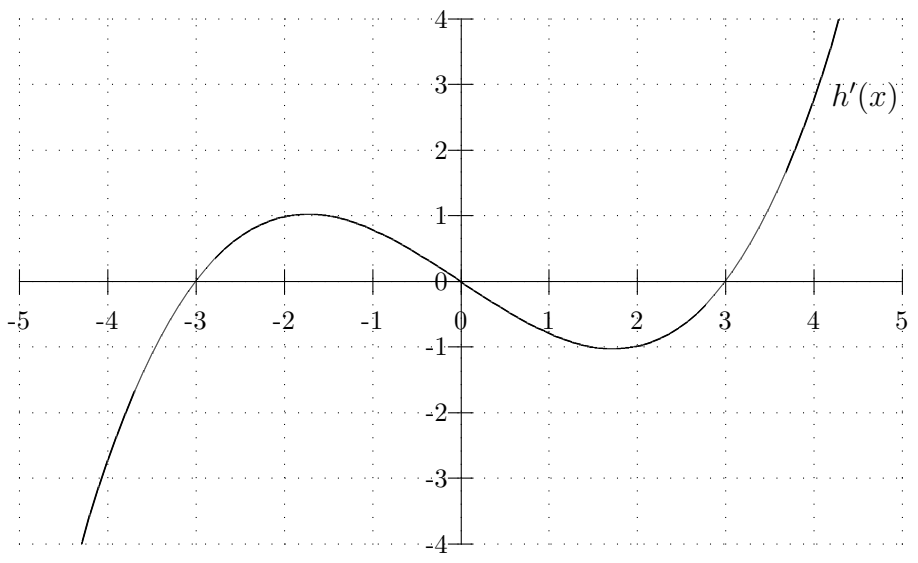
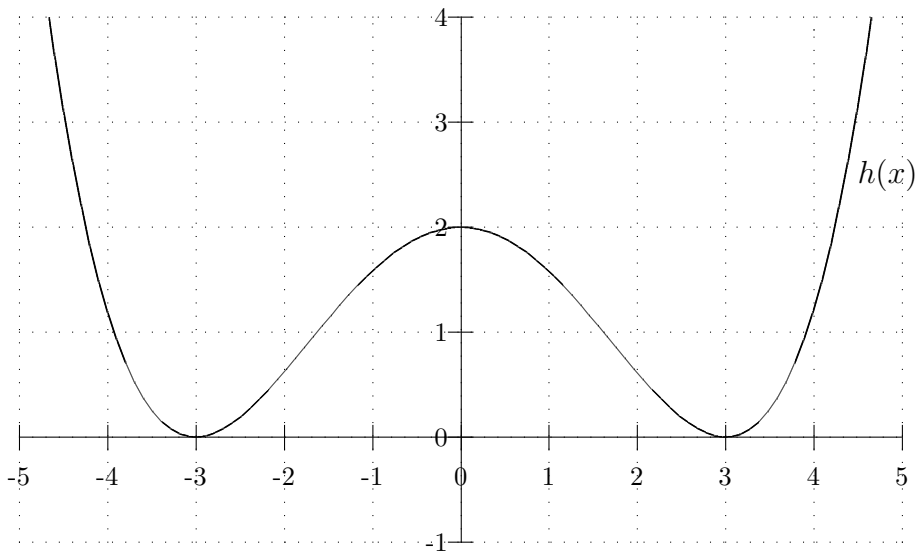
MATH 112

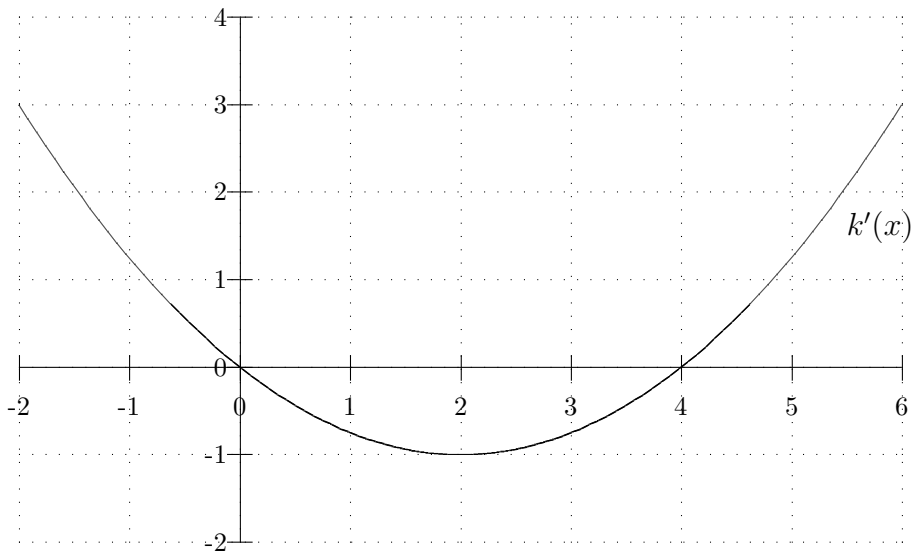
Lecture to Accompany Worksheet 6



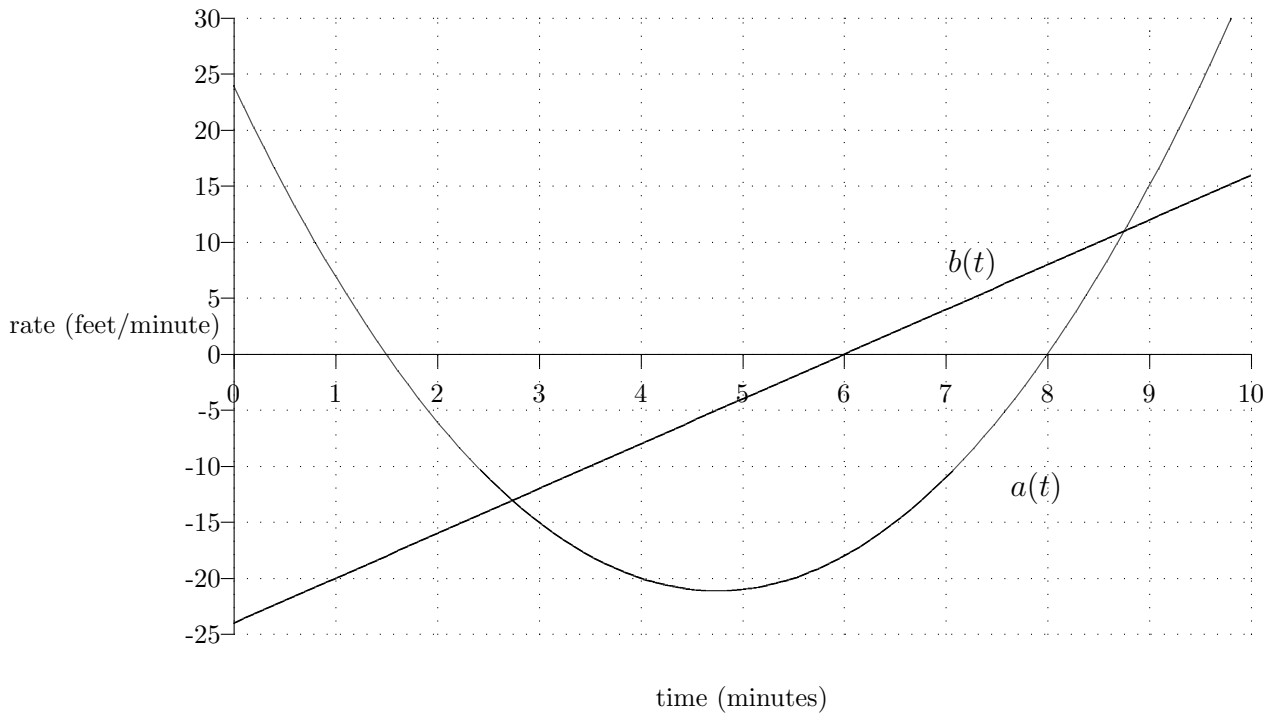
x	-4	-3	-2	-1	0	1	2	3	4
$f'(x)$									
$g'(x)$									







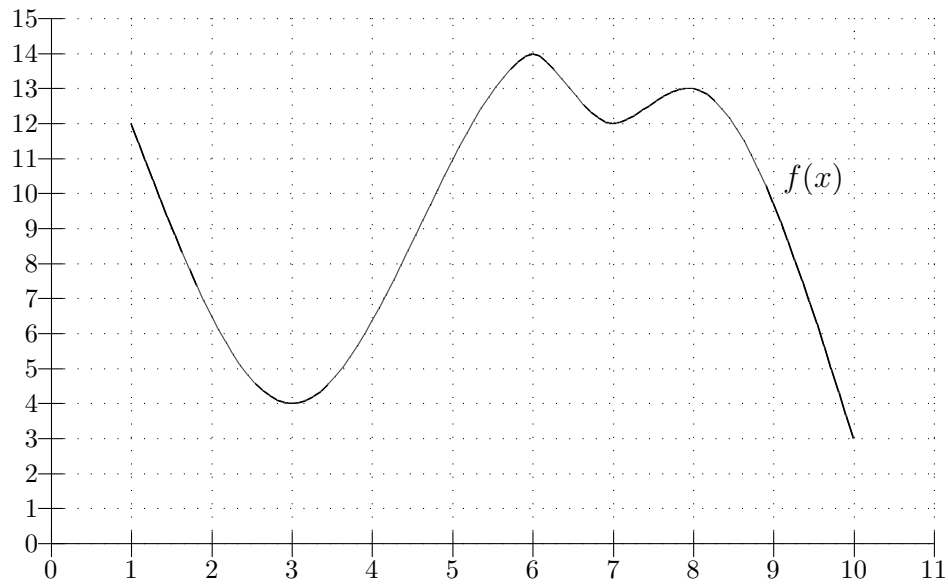
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Lecture to Accompany Worksheet 11



MATH 112

Lecture to Accompany Worksheet 14

The following is the graph of a function $f(x)$ on the interval from $x = 1$ to $x = 10$.



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Lecture to Accompany Worksheet 18

Example: To earn a bit of extra cash, you start selling dried fruit and nut mixtures to hungry shoppers at the Fremont Sunday Flea Market. You sell two varieties:

- Mostly Nuts!, which contains 25% fruit and 75% nuts
- Fruitilicious!, which contains 55% fruit and 45% nuts

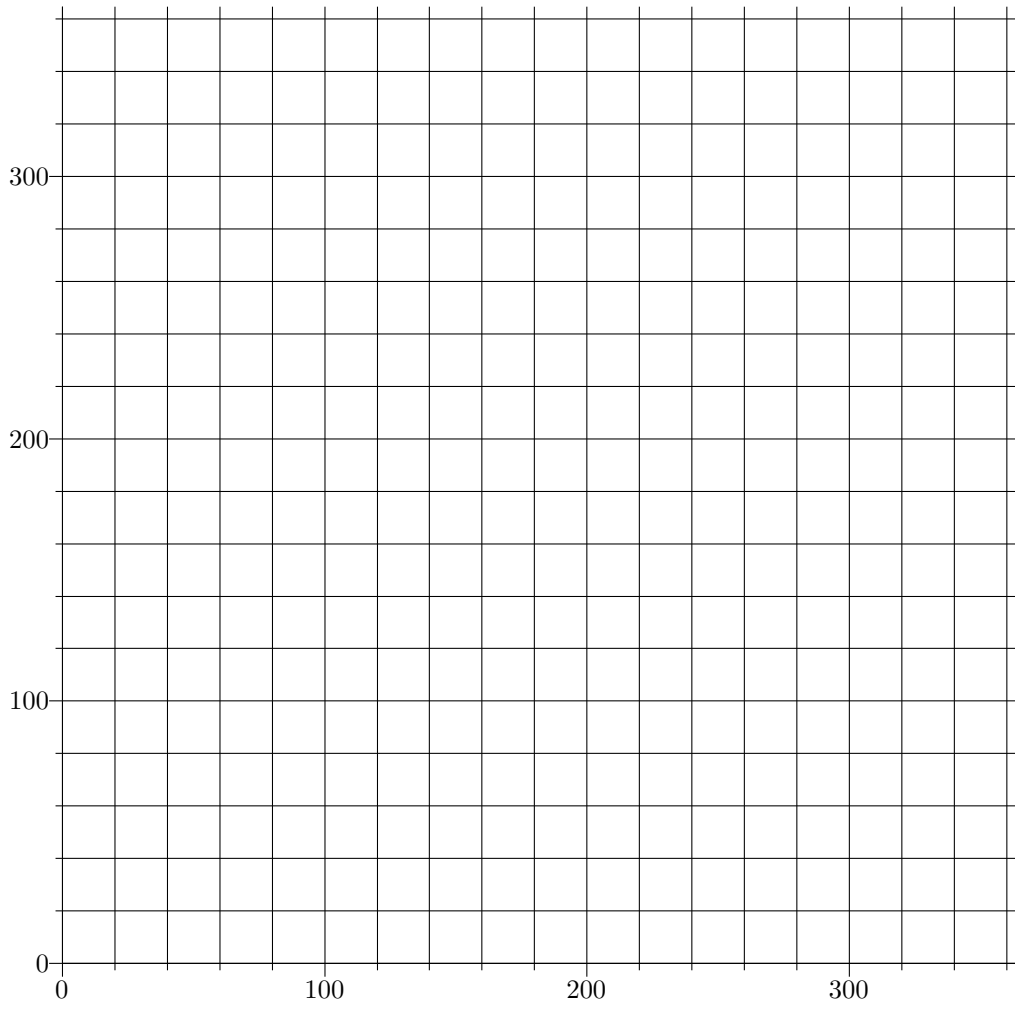
For every pound of Mostly Nuts! you sell, you make \$.35 profit; and for every pound of Fruitilicious!, you make \$.60 profit. Your supply of fruit is limited to 90 pounds a day; your supply of nuts is limited to 120 pounds a day.

Let x be the amount of Mostly Nuts! that you make (in pounds) and y be the amount of Fruitilicious! that you make (in pounds).

Key Question: How much of each mixture should you make in order to maximize profit?

Another Example: Gina inherits a large sum of money and a bunch of pet cages from an animal-loving aunt. She decides to rescue some unwanted pets from a shelter. She has 20 cages that can each house either a bunny or a ferret. She does some research and finds that, on average, it costs \$.60 a day to feed one ferret and \$.80 a day to feed one bunny. Gina can budget no more than \$14.40 a day for pet food. But cuddliness is an issue for Gina. She figures that bunnies are twice as cuddly as ferrets. That is, ferrets are each worth one cuddle-unit, while bunnies are each worth two.

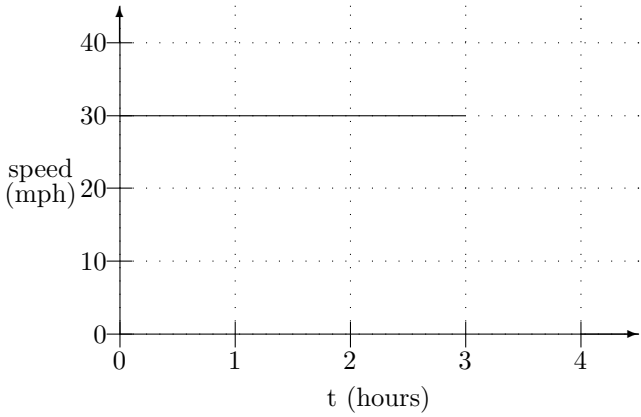
Determine how many of each pet Gina should adopt to maximize cuddliness while staying within her budget and without buying more cages.



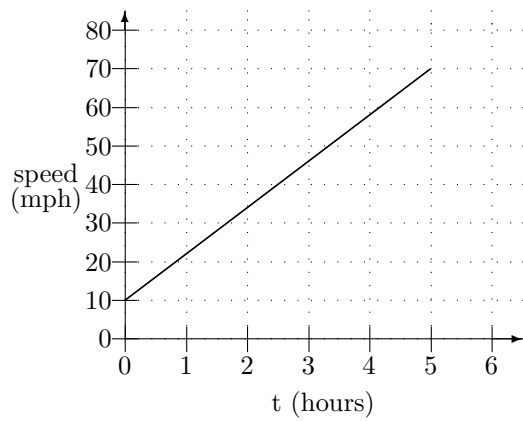
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Lecture to Accompany Worksheet #19

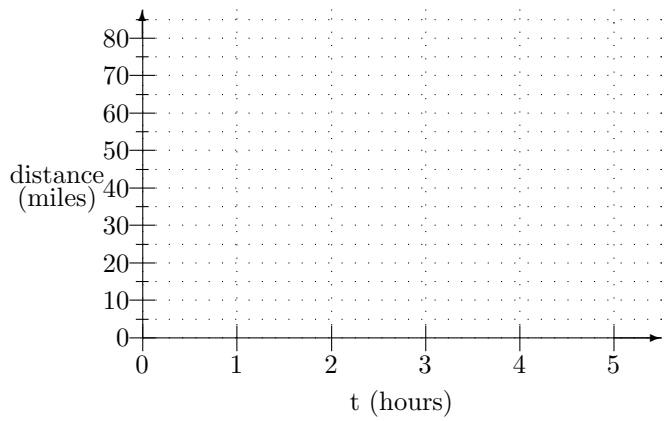
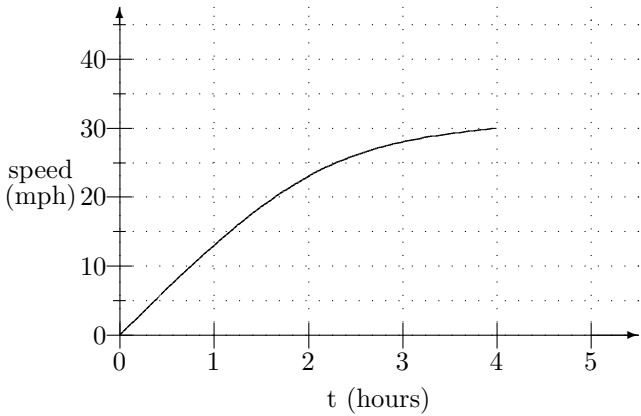
Example 1:



Example 2:



Example 3:

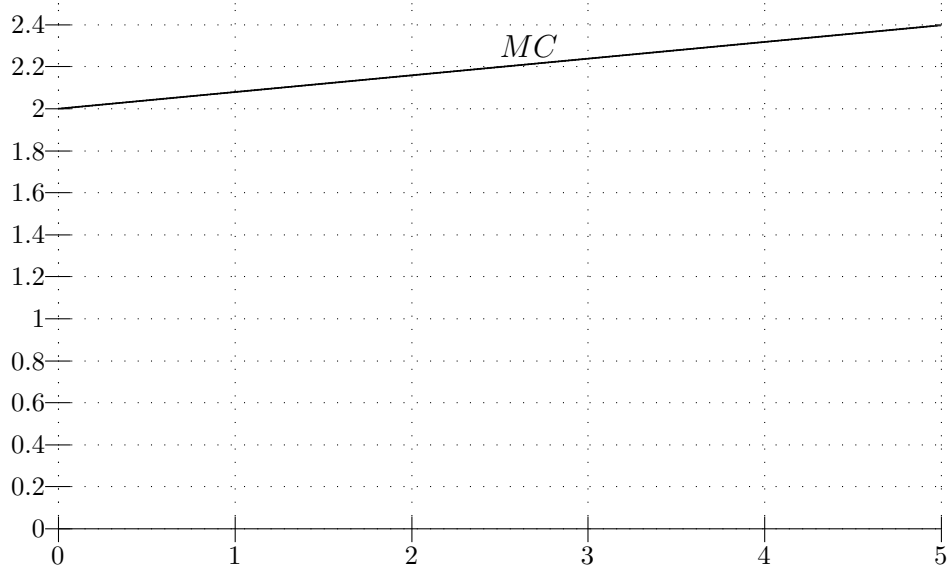
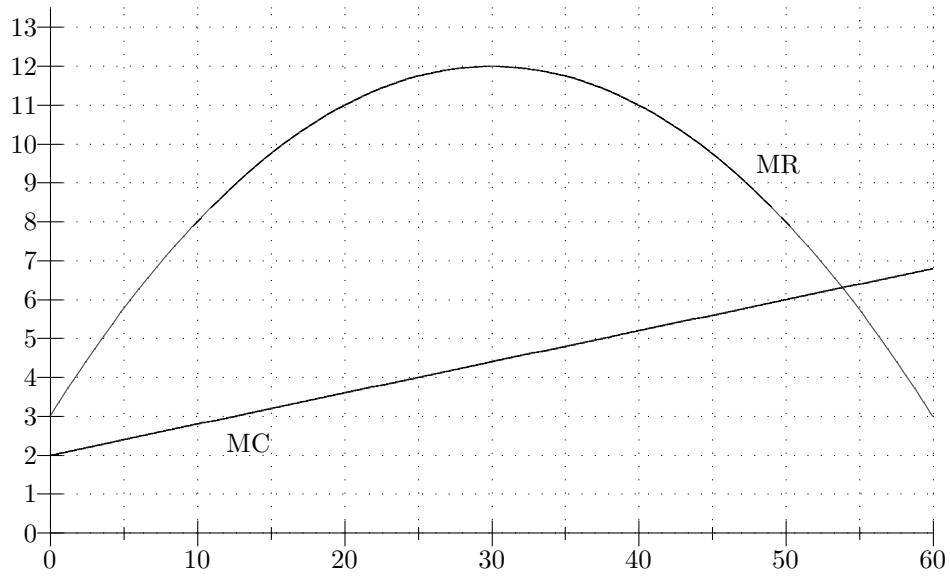


Interval	0-1	1-2	2-3	3-4
Distance covered in that interval				

time	0	1	2	3	4
Distance covered by that time					

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Lecture to Accompany Worksheet 20

TR/TC From MR/MC



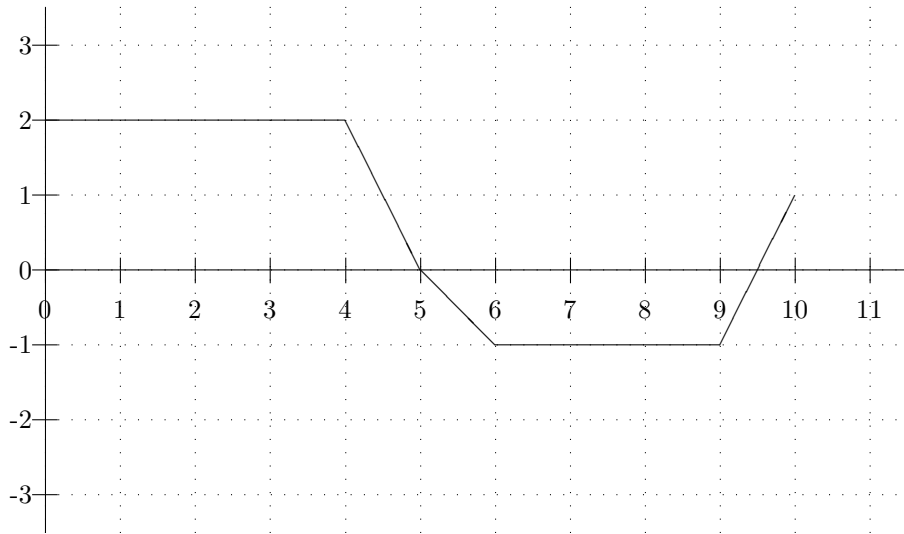
Interval	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Area under <i>MC</i> on that interval								

<i>q</i>	0	5	10	15	20	25	30	35	40
Area under <i>MC</i> from 0 to <i>q</i>									

Interval	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Area under <i>MR</i> on that interval								

<i>q</i>	0	5	10	15	20	25	30	35	40
Area under <i>MR</i> from 0 to <i>q</i>									

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Lecture to Accompany Worksheet 21



Interval	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
Integral of $f(x)$ on that interval										

m	0	1	2	3	4	5	6	7	8	9	10
$A(m)$											

