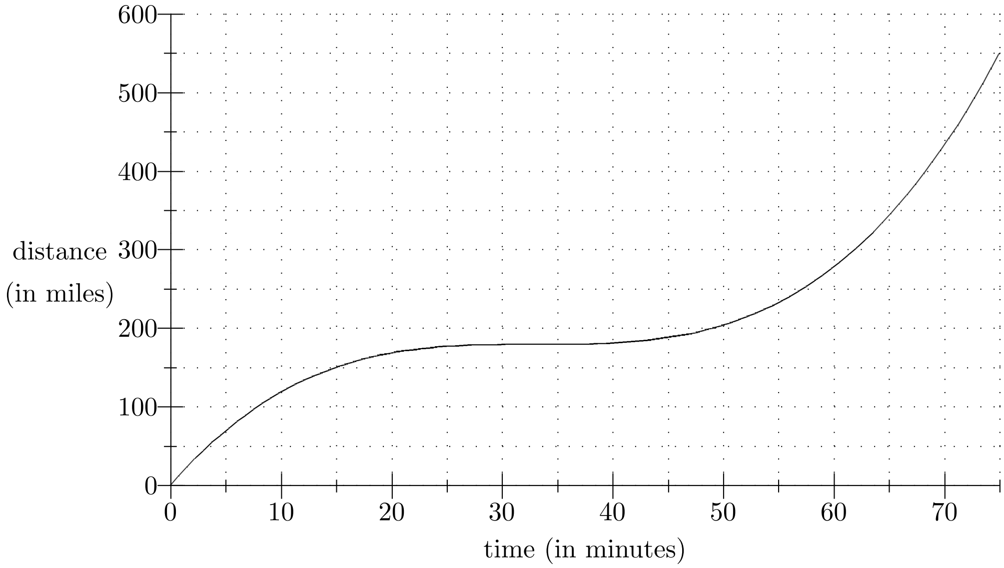
Handout to accompany Worksheet #1

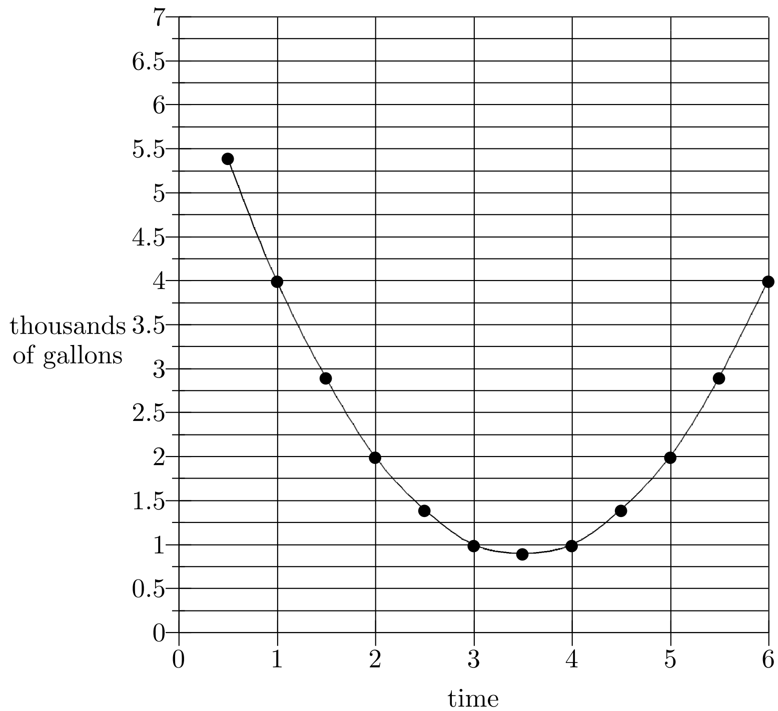
Situation: The graph below is distance vs. time for a rocket car traveling on the rocket car freeway.



Handout to accompany Worksheet #2

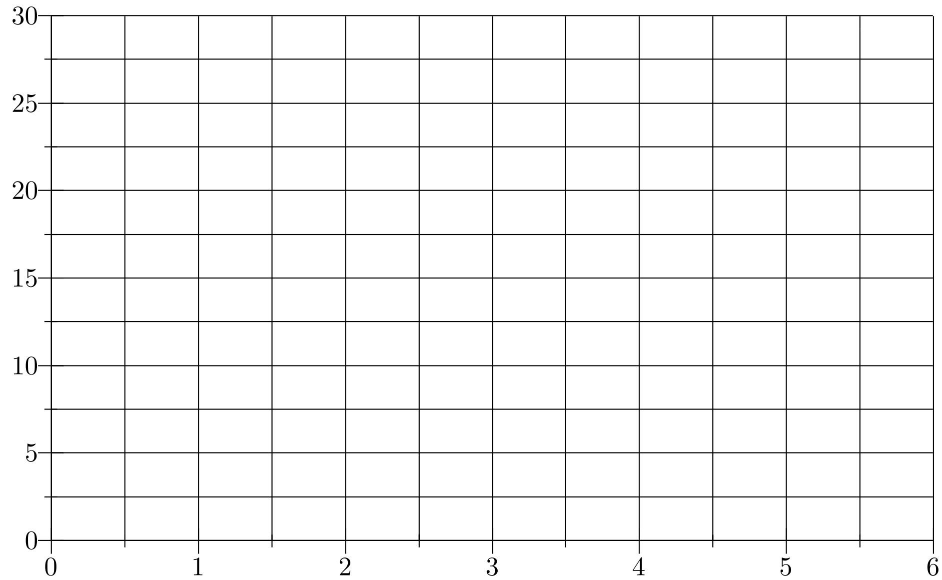
Situation: The chart and graph below show the amounts of water (in thousands of gallons) drawn from a city water reservoir by customers over half-hour intervals from noon to 6 p.m. Water flows in the reservoir at the constant rate of three thousand gallons per half hour.

t	U
12:00	N/A
12:30	5.4
1:00	4
1:30	2.9
2:00	2
2:30	1.4
3:00	1
3:30	.9
4:00	1
4:30	1.4
5:00	2
5:30	2.9
6:00	4



Questions: If the reservoir were empty at noon, could the customers be supplied with their water for the whole day? If not, what would be a reasonable amount of water to have in the reservoir at noon to be sure that the customers can be sufficiently supplied?

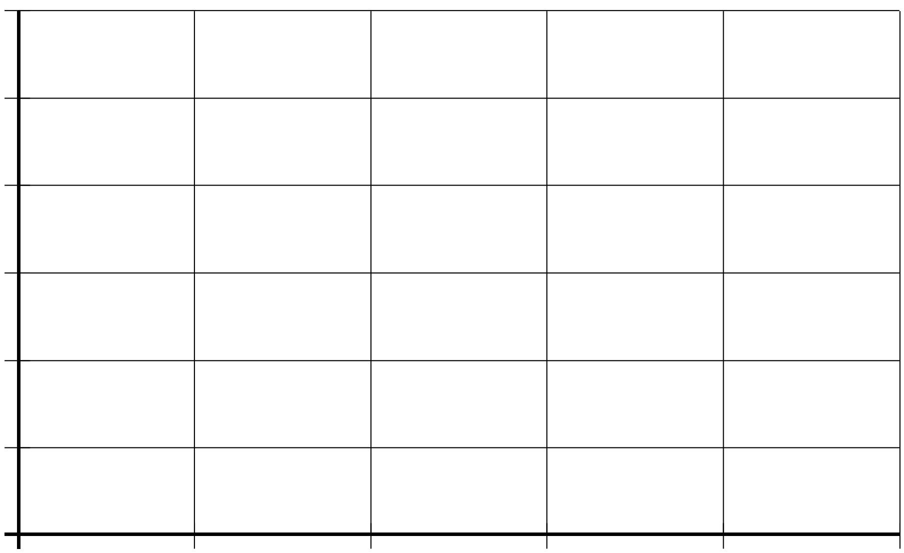
t	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00
U	5.4	4	2.9	2	1.4	1	.9	1	1.4	2	2.9	4
O												
I_1												
I_2												



Situation: You produce and sell tubes of shin polish. In order to attract large orders, you have devised a sliding price scale, given in the table below. It costs $6 to produce each tube of shin polish.

Question: Your partner says that you cannot run a business by charging less for more and thinks that you will be losing money every time a customer increases his or her order size. You say that as long as you get more than $6 per item, you're still ahead. Is anyone right?

(1) quantity q	1	2	3	4	5	6	7	8	9
(2) price per tube	20	18	16	14	12	10	8	6	4
(3)									
(4)									
(5)									
(6)									
(7)									



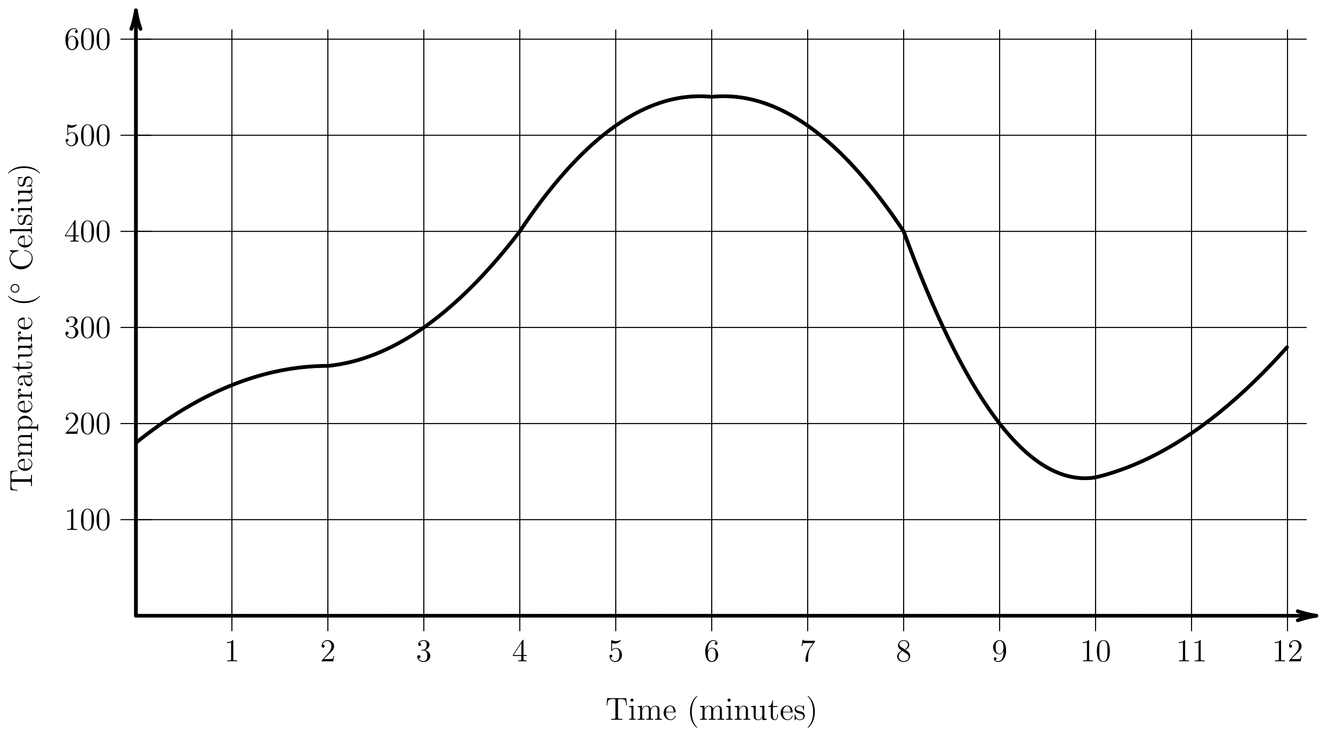
Handout to Accompany Worksheet #6

Story: A yellow car and a green car travel down a long, straight road. At $t = 0$, both cars are at the same place (the starting line). Yellow's distance (in miles) is given in the table below:

t (in min)	0	5	10	15	20	25
Yellow	0	7.3	11.4	13.6	15.1	17.5
Green						

Green sits at the starting line and then, for every place along the highway, Green reaches that place exactly 5 minutes after Yellow does.

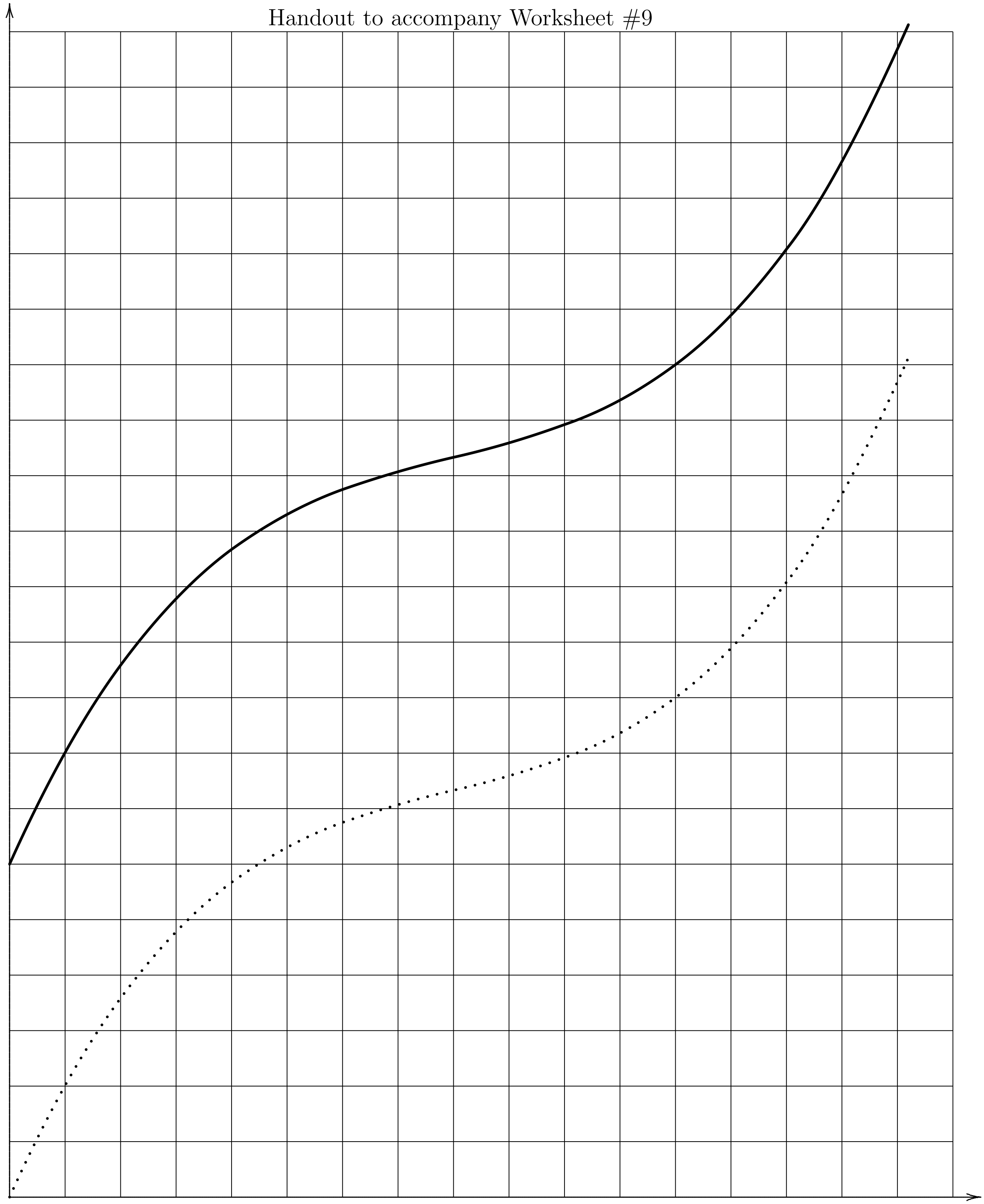
Handout to accompany Worksheet #7



	English	Graph	Functional Notation
1	At time $t = 4$, the temperature is 400°.	At $t = 4$, the height of graph is 400.	$P(4) = 400$
2			$P(10) > P(9)$ * * false
3	Between 4 and 6 minutes, the temperature rises by 140°.		
4		The slope of the secant from $t = 0$ to $t = 4$ is 57.	
5	When is the temperature 350°?		
6		The graph has height 200 for three different values of t.	
7			Find t so that $P(t) - P(2) > 100$.
8			$\frac{P(5)-P(2)}{5-2} > \frac{P(8)-P(2)}{8-2}$
9	Find two times, 2 minutes apart, when the temperature is the same.		
10		slope of the secant line from 2 to h	
11	How many minutes after $t = 4$ does the temperature become 250°?		
12			If $\Delta t = 3$, for what t is ΔP highest?
13		the change in height of the graph between t and $t + 2$	
14			Solve $P(3+r) - P(3) = 100$ for r

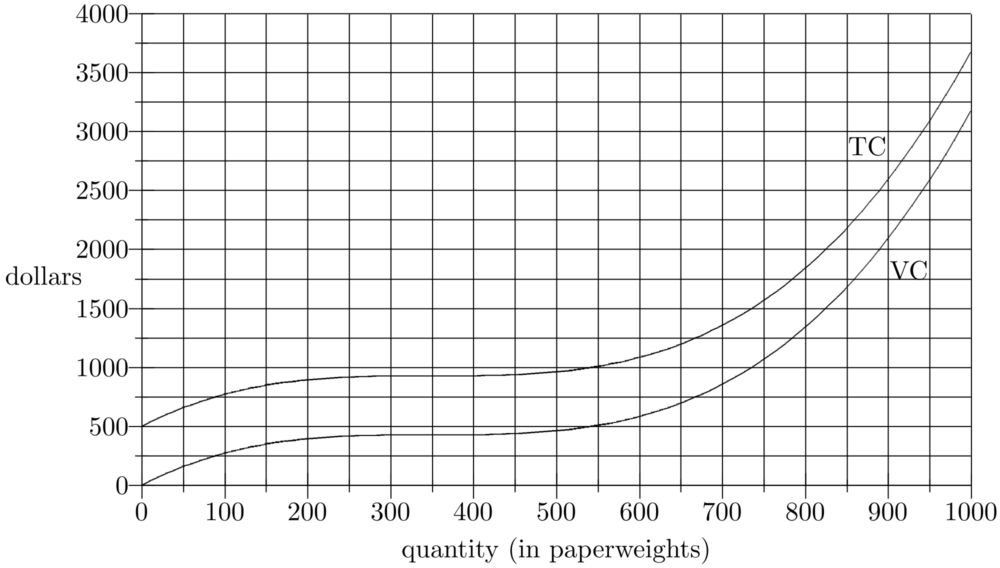
	English	Graph	Functional Notation
15		slope of secant line from t to $t+3$.	
16	the average rate of change of temperature for t minutes beginning at $t=3$		
17		slope of the secant from $t=p$ to $t=q$.	
18			Is $P(2)+P(3)=P(5)$?
19		For which t is graph twice as high as it is when $t=10$?	
20	Find a span over which temp rises by $50°$/min on average.		
21	change in time		
22			ΔP

Handout to accompany Worksheet #9

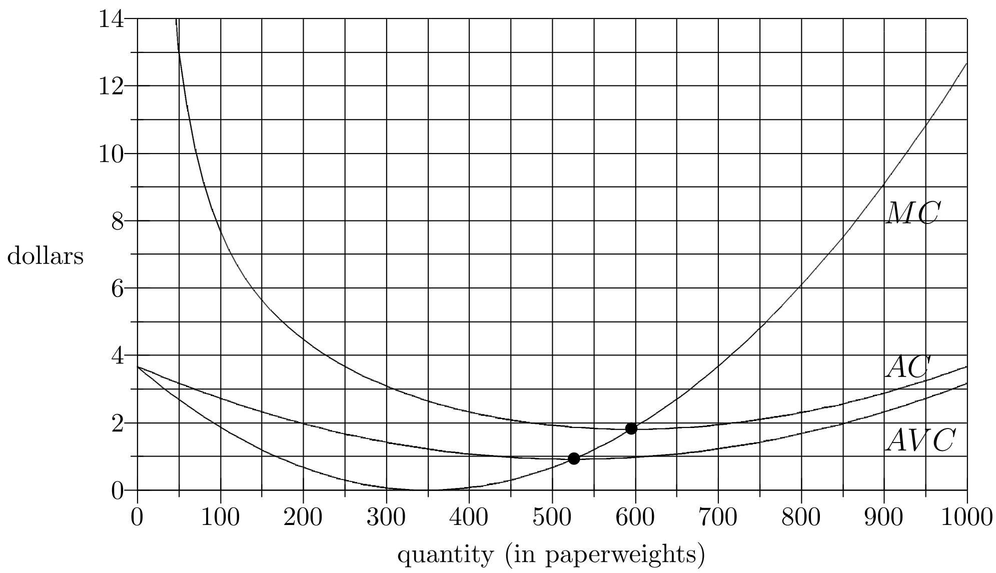


Handout to accompany Worksheet #10

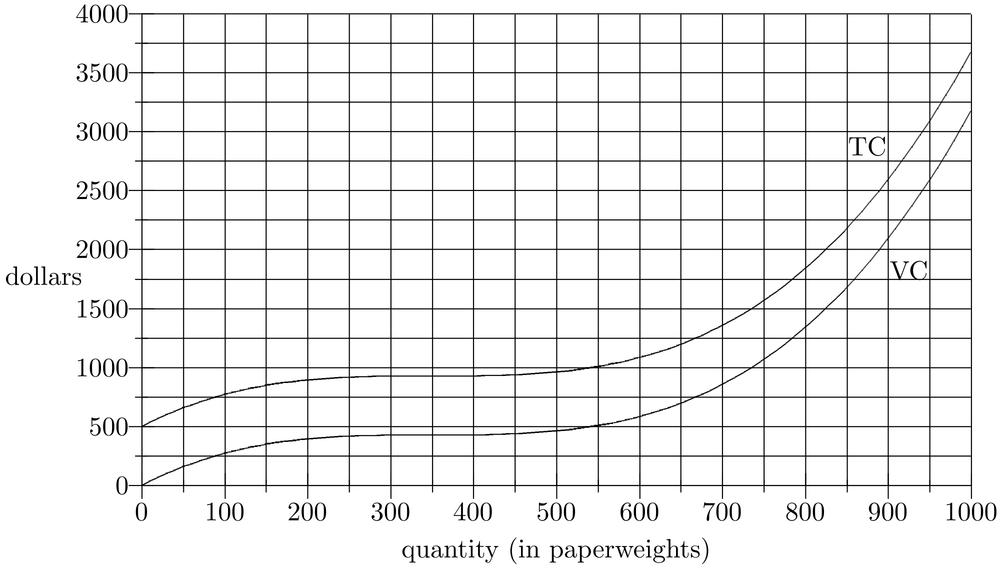
The following are the graphs of Total Cost and Variable Cost for selling paperweights.

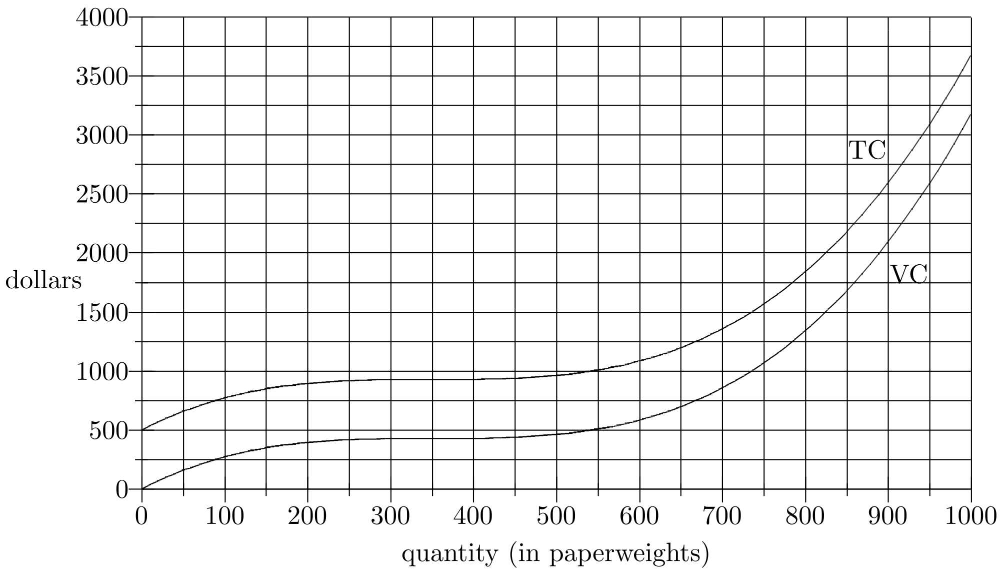


q	100	200	300	400	500	600	700	800	900	1000
MC	1.88		0.08	0.08	0.68	1.88	3.68	6.08	9.08	12.68
AC	7.73	4.48		2.33	1.93	1.81	1.94	2.30	2.88	3.68
AVC	2.73	1.98	1.43	1.08	0.93	0.98		1.68	2.33	3.18

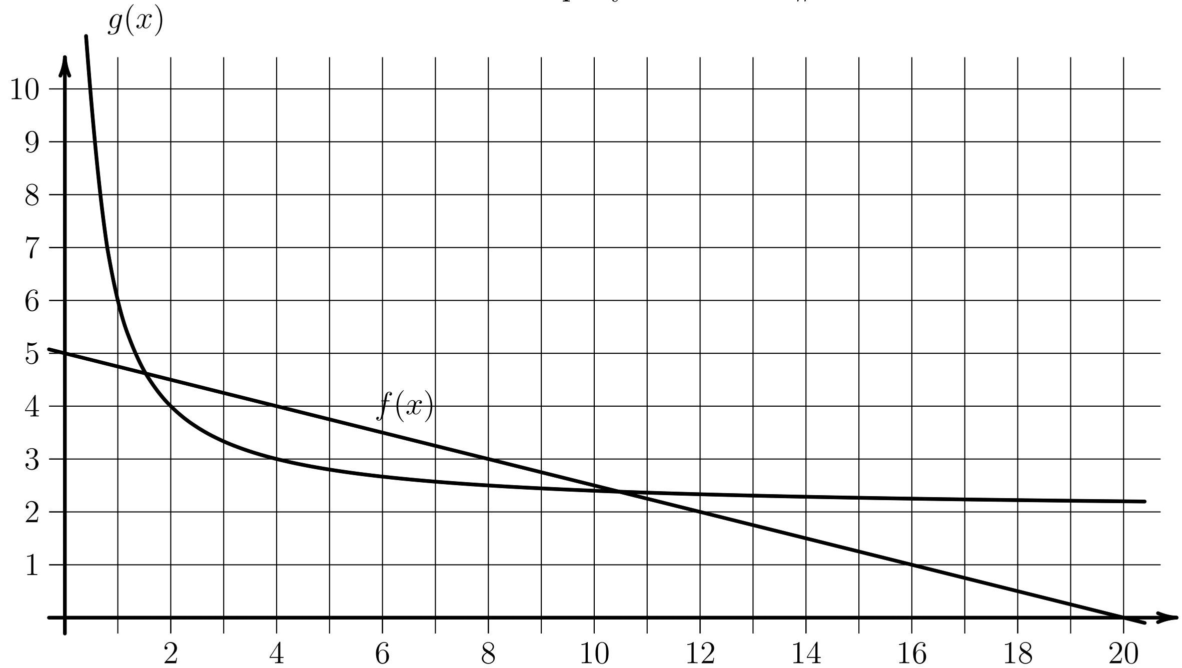


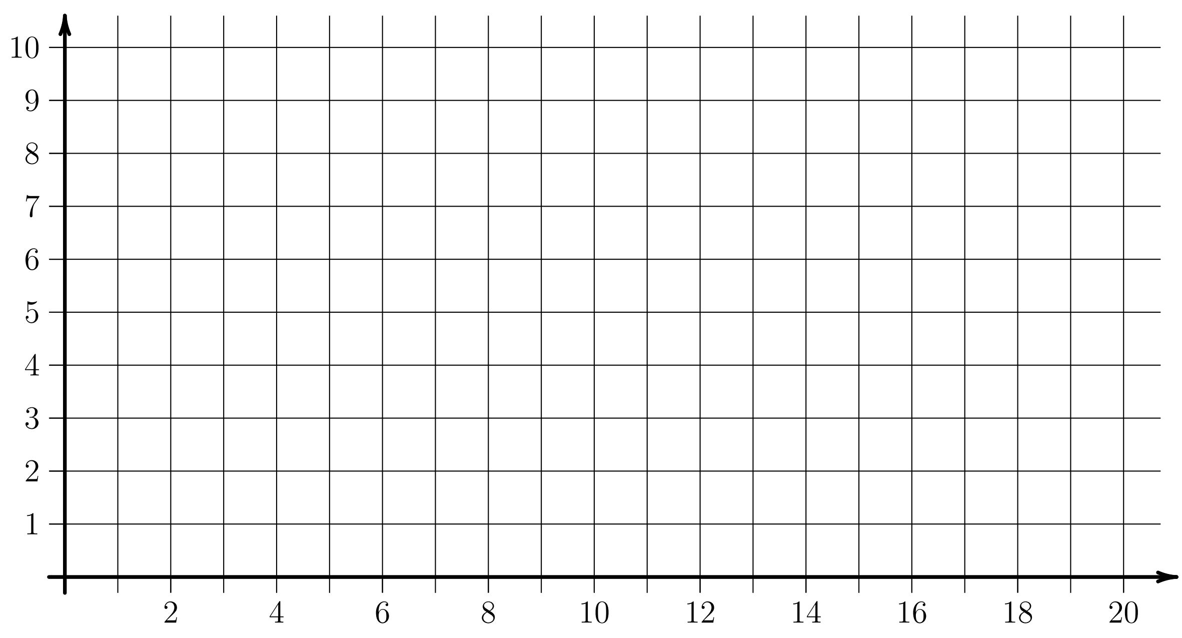
Your copy of the TC and VC graphs for selling paperweights might be getting messy. Here are two more copies:





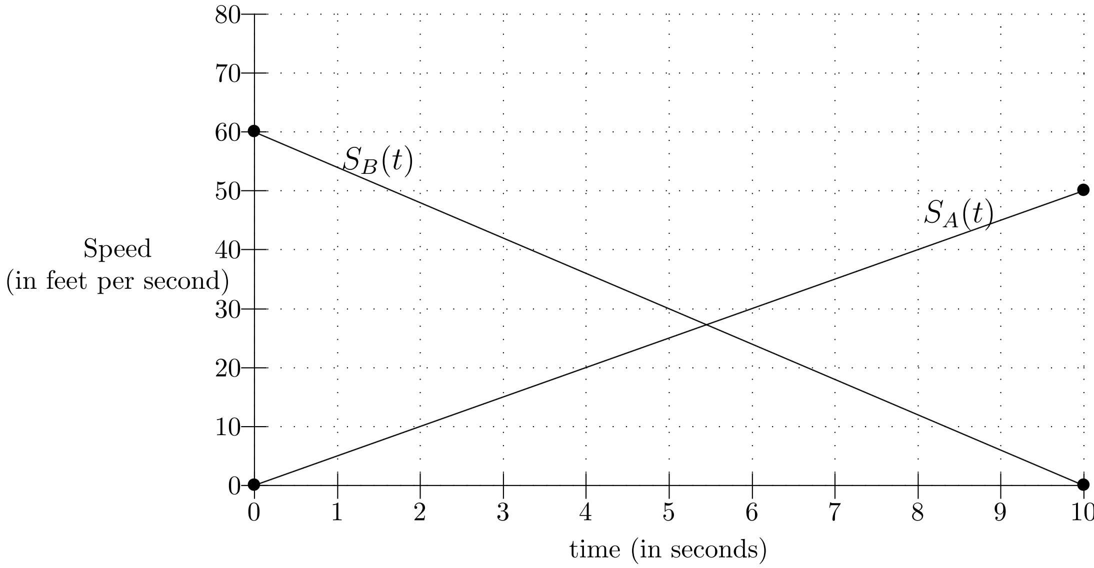
Handout to accompany Worksheet #15





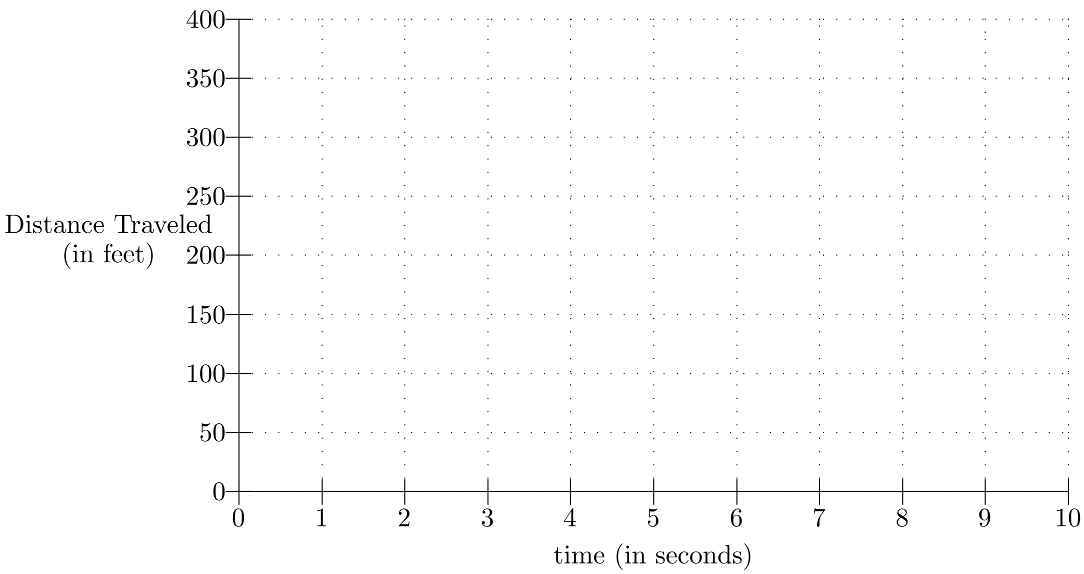
Handout to accompany Worksheet #17

Story: The figure below gives the graphs of *speed* for two cars, Car A and Car B. Assume that at time $t = 0$, the two cars are next to one another.



$S_A(t) = 5t$

$S_B(t) = -6t + 60$



$D_A(t) =$

$D_B(t) =$

Handout to Accompany Worksheet #19

Story: Your Great Aunt Emmy dies, leaving you some money. However, she wants to make sure you understand how interest is compounded. So, you must choose between the following options.

Option A: An account is set up in your name and $5000 is deposited in it. A deposit of $5000 is made at the end of each year for the next 25 years. You get the money at the end of the 25^{th} year, after the annual deposit has been made.

Option B: An account is set up in your name and $5000 is deposited. At the end of each year, 14% of the current balance is credited to the account. You are given the balance at the end of the 25^{th} year, after the interest has been credited.

Option C: Same as B, but with 6.5% of the balance credited every six months.

Goal: to choose the most lucrative option