

Sandy is renting a car for her weekend trip to San Francisco. She looked at prices from two different companies. (A.1.C, A.1.E).

Sign & Drive charges its customers \$2 per mile to rent a car.

Raceway charges its customers \$75 plus \$0.50 per mile to rent a car.

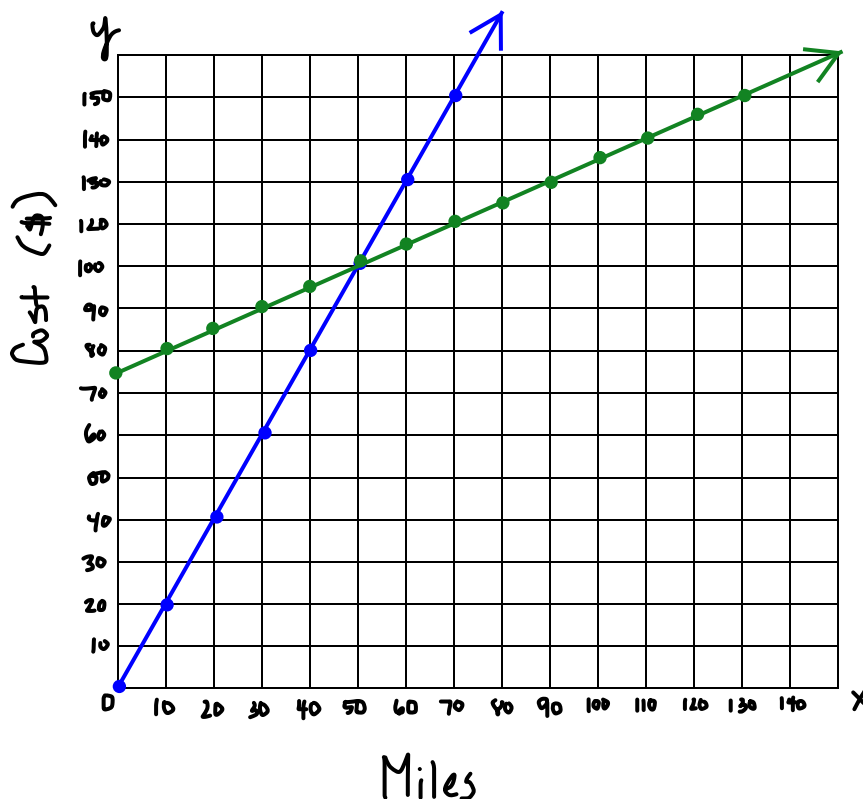
1. Write an equation Sandy could use to calculate the cost for renting a car for any number of miles.

Sign & Drive $C = 2m$ Raceway $C = 75 + 0.5m$

2. Create a table to represent the cost of ordering t-shirts with both companies.

Number of Miles	Cost for Sign & Drive	Cost for Raceway
0	0	75
10	20	80
20	40	85
30	60	90
40	80	95
50	100	100
60	120	105

3. Make a graph to represent the data from your table. Be sure to label your x and y axis, create an appropriate scale and label the independent and dependent variables.



4. How much would 40 miles cost for both companies?

Sign & Drive \$80
 $C = 2m$
 $C = 2(40)$
 $C = \$80$

Raceway \$95
 $C = 75 + 0.5(40)$
 $C = 75 + 20$
 $C = \$95$

5. How many miles could Sandy drive if she rented from raceway if she has only \$87 to spend?

$$C = 75 + 0.5m$$

$$87 = 75 + 0.5m$$

$$\begin{array}{r} -75 \quad -75 \\ \hline 12 = 0.5m \\ \hline 0.5 \quad 0.5 \end{array}$$

$$m = 24 \text{ miles}$$

6. Which company's graph is steeper? Why?

Sign & Drive is steeper because they charge more per mile.

7. Which company's graph is least steep? Why?

Raceway's graph is less steep because they charge less per mile.

8. At what point do the companies cost the same? How do you know by looking at the graph and table?

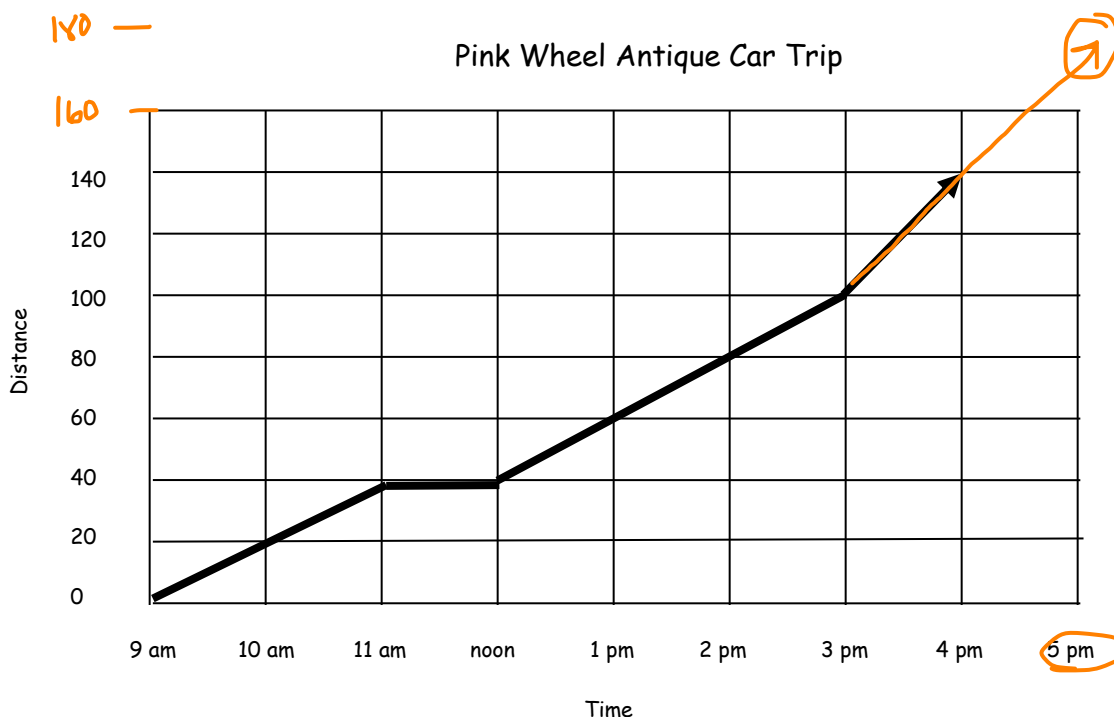
At 50 miles they both cost \$100. This is the point of intersection on the graph and where the y-values are the same on the table.

9. Where does each company's graph intersect the y axis? What do these points explain about the problem?

Sign & Drive (0,0)
 Raceway (0,75)

Raceway charges \$75 up front.

The Pink Wheel Antique Car Club went on a Saturday Car Trip to the coast. The graph shows the time and distance traveled by the club members. (A.2.C)



The average rate of speed in miles per hours, r , can be found by the ratio $r = \frac{d}{t}$, where d is the number of miles traveled and t is the number of hours.

10. What was the average rate of speed from 9am to 11am?

$$\frac{40 \text{ miles}}{2 \text{ hours}} = 20 \text{ mph}$$

11. Give an example of what took place from 11am to noon.

The car was stopped.
(ex: they took a break to eat, had a flat tire, etc.)

12. How far would you expect them to be by 5pm?

$$180 \text{ mi}$$

Use the pattern below to predict the next sequence in the pattern.

step	# of triangles
1	2
2	6
3	10
4	14
5	18

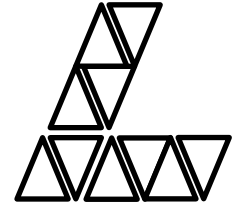
) +4
) +4
) +4



Step 1



Step 2



Step 3

13. What are the independent and dependent variables? (A.1.A)

Independent: step (s) Dependent: # of triangles (+)

14. Write an expression which can be used to determine the number of dots in the nth step? (A.3.B)

$T = 4s$
 Equation: $T = 4s - 2$ *check it*
 $T = 4(1)$
 $T = 4 - 2$ * needs to equal 2 so we subtract 2
 $T = 2$

15. How many dots will there be in the 12th figure of the pattern? (A.3.B) 46

$T = 4s - 2$
 $T = 4(12) - 2$
 $T = 48 - 2$
 $T = 46$ triangles

16. Which step will have 110 dots? triangles

$T = 4s - 2$
 $110 = 4s - 2$
 $+2 \quad +2$
 $\frac{112}{4} = \frac{4s}{4}$
 $s = 28^{\text{th}}$ step

17. What is an appropriate domain?

All positive integers
 $x \geq 1$