



Grade 7 Student Strategies

Moving Straight Ahead, Problem 2.1



2.1 Henri and Emile's Race

Finding the Point of Intersection

-  In Ms. Chang's class, Emile found out that his walking rate is 2.5 meters per second. That is, Emile walks 2.5 meters every 1 second. When he gets home from school, he times his little brother Henri as Henri walks 100 meters. He figures out that Henri's walking rate is 1 meter per second. Henri walks 1 meter every second.



Problem 2.1

Henri challenges Emile to a walking race. Because Emile's walking rate is faster, Emile gives Henri a 45-meter head start. Emile knows his brother would enjoy winning the race, but he does not want to make the race so short that it is obvious his brother will win.

- A** How long should the race be so that Henri will win in a close race?
- B** Describe your strategy for finding your answer to Question A. Give evidence to support your answer.

A C E Homework starts on page 38.



STUDENT 1

2.1

10 meters Henri $10 + 45 = 55$

Emile $2.5 \cdot 10 = 25$

25 meters Henri $25 + 45 = 70$

Emile $2.5 \cdot 25 = 62.5$

27 meter Henri $27 + 45 = 72$

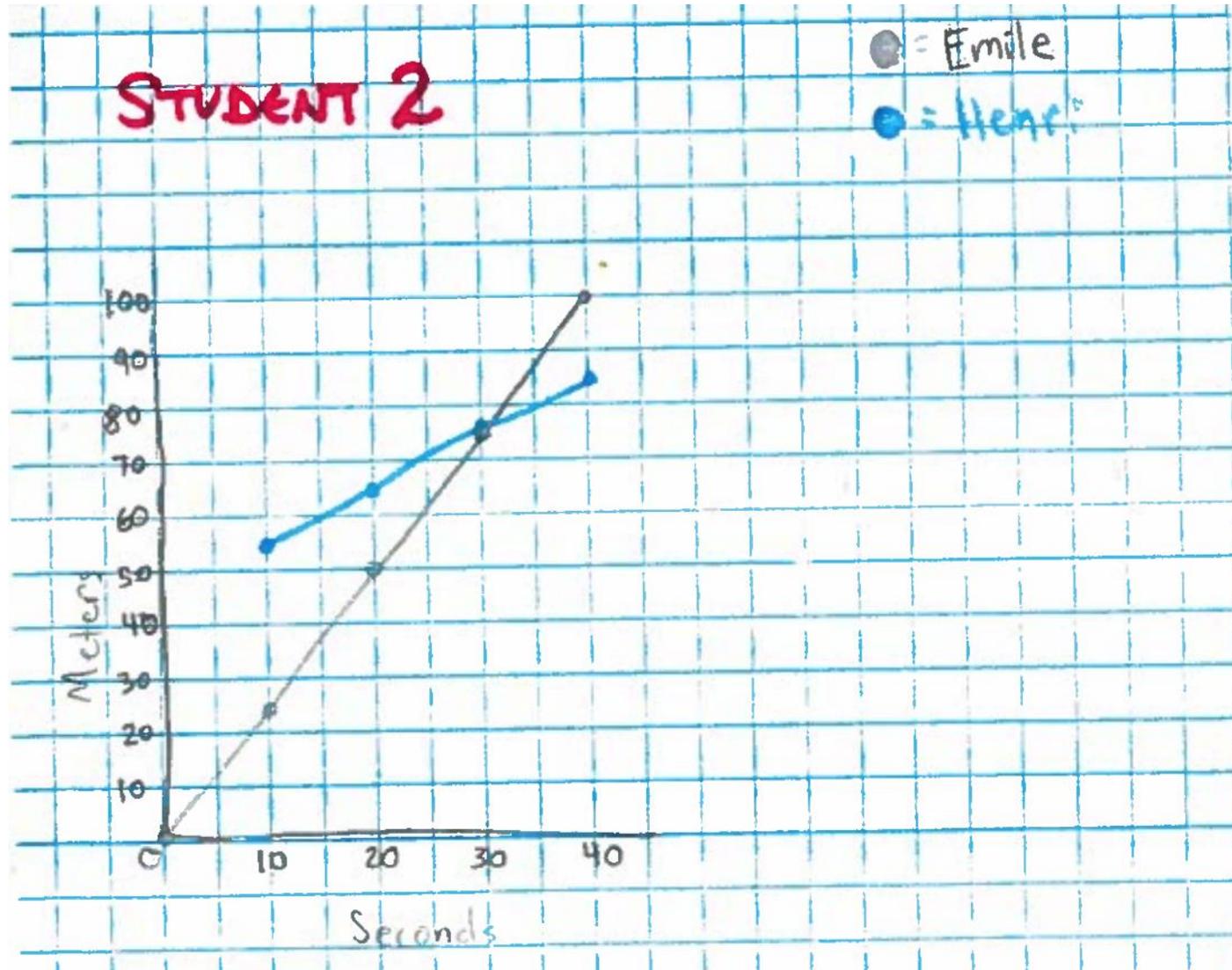
Emile $2.5 \cdot 27 = 67.5$

28 meters Henri $28 + 45 = 73$

Emile $2.5 \cdot 28 = 70$

30 meters Henri $30 + 45 = 75$

Emile $30 \cdot 2.5 = 75$





Prob 2.1

2.5

1. find

45 sec

40 sec

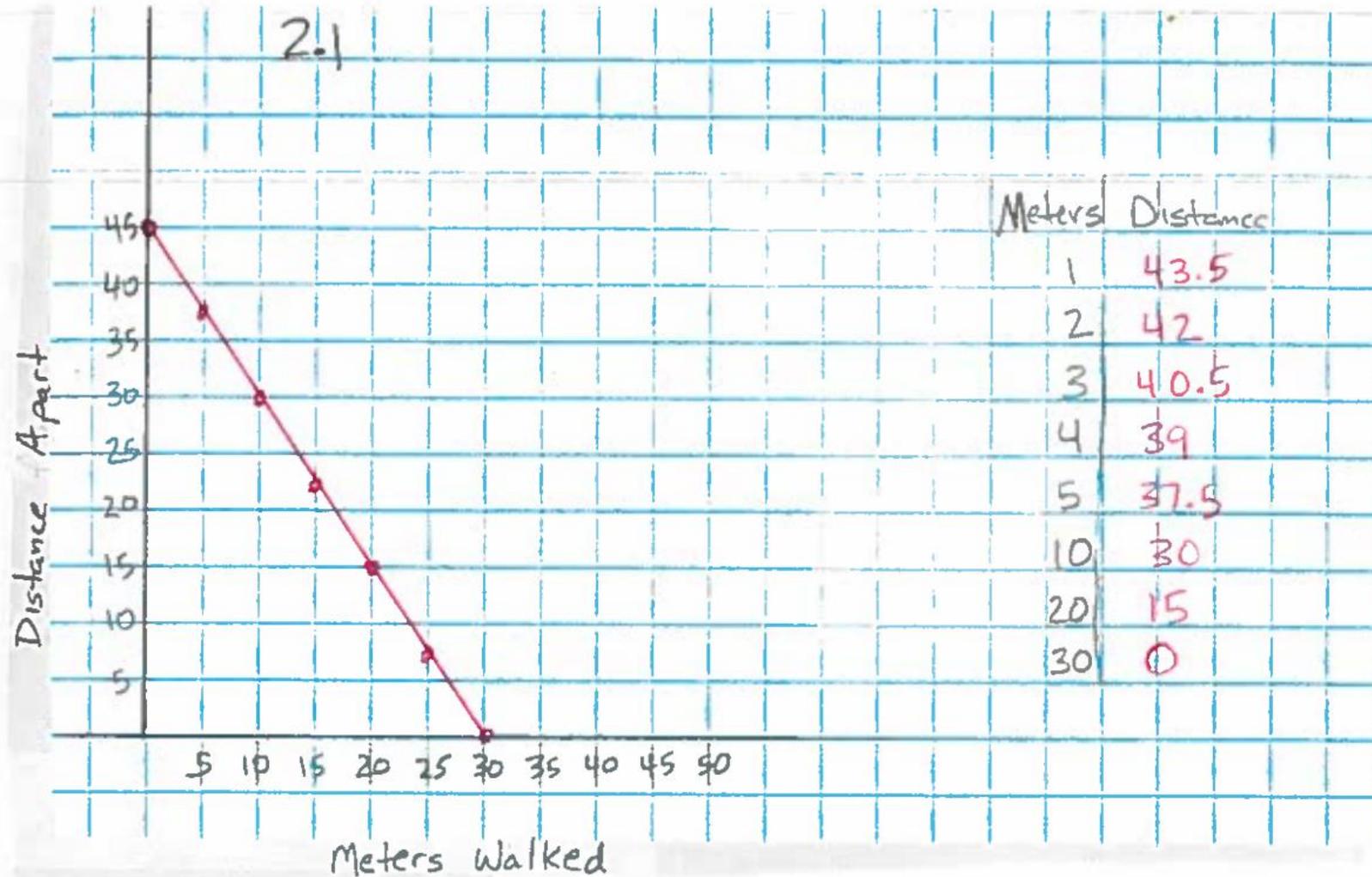
A 85 meter

B strategy

STUDENT 3



STUDENT 4





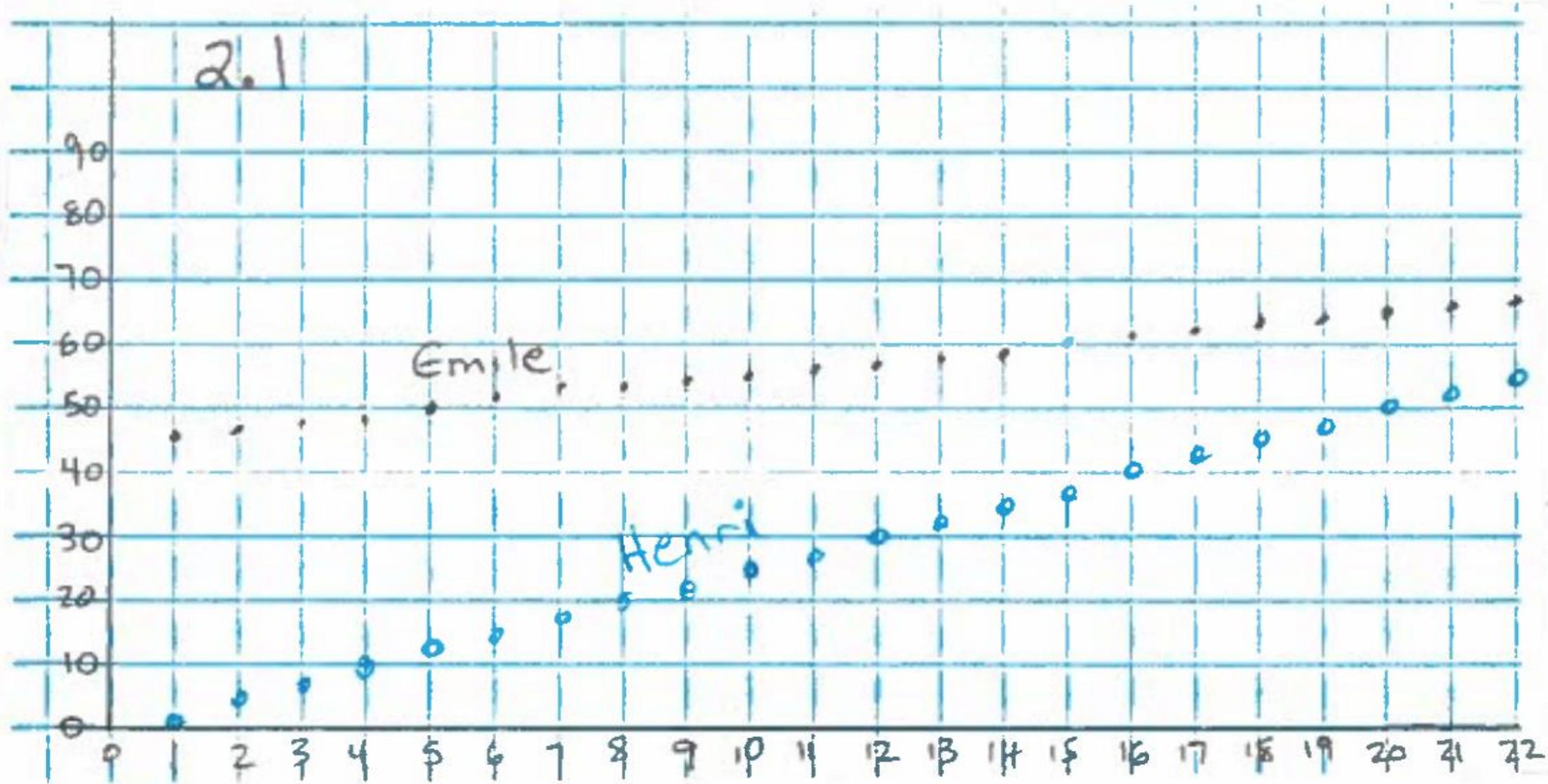
STUDENT 5

2,1

METERS	HENRI	EMILE
0	45	0
10	55	25
20	65	50
30	75	75
40	85	100
50		



STUDENT 6





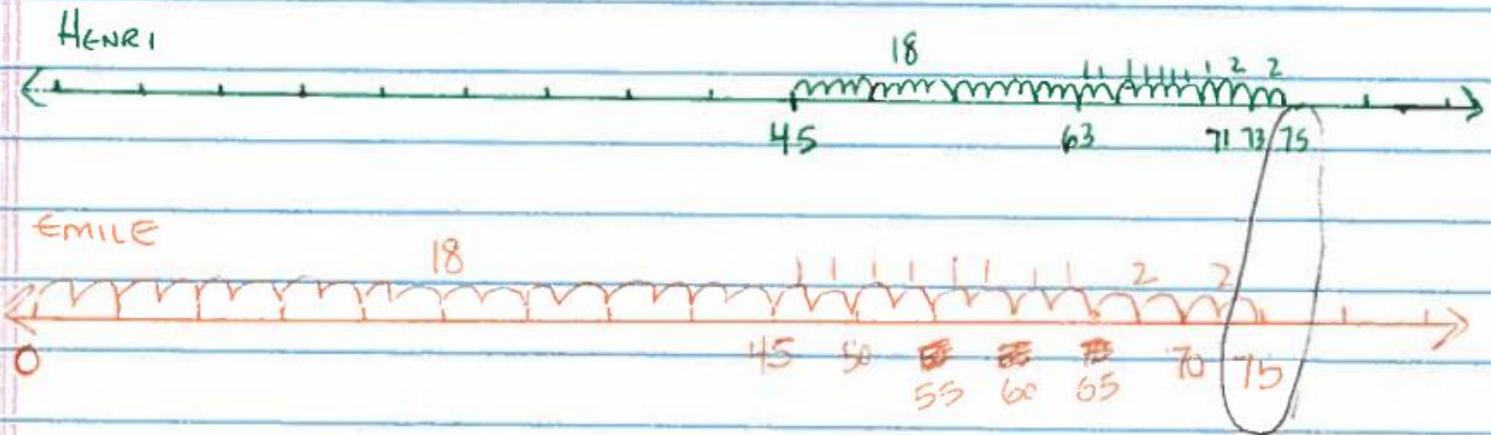
2.1

meters	Henri	Emile
1	46	2.5
2	47	5
3	48	7.2
4	49	10
5	50	12.5
6	51	15
7	52	17.5
8	53	20
9	54	22.5
10	55	25
11	56	27.5
12	57	30
13	58	32.5
14	59	35
15	60	37.5
16	61	40
17	62	42.5
18	63	45
19	64	47.5
20	65	50
21	66	52.5
22	67	55
23	68	57.5
24	69	60
25	70	62.5
26	71	65



STUDENT 8

PROBLEM 2.1



18 meters just to get to where Henri starts
by that time Henri is at 63

If we keep counting on, they will meet at 75.
So if Emile wants ~~to~~ to win, they should go
longer than 75 meters.



STUDENT 9

3-20-13

Z.V

Bailey

A. Emile $\frac{70}{150}$ henry will get to
 $\frac{100}{150}$ in $\frac{70}{150}$ seconds meters meters
 to 100 meters headstart = $\frac{70}{150}$
 Emile goes $\frac{70}{150}$ seconds
 $\frac{150}{70} = 2.14$ seconds
 Unit rate

B. keep finding numbers to divide by there
 walks rate so I did $\frac{70}{150}$ I got
 $\frac{70}{150}$ and $\frac{70}{150} = \frac{70}{150}$ henry's walks rate $\frac{1}{1} = 70$ meters in
 $\frac{70}{150}$ seconds - 45 meter headstart = 25 seconds to go
 $\frac{70}{150}$ meters then Emile is just $\frac{70}{150}$ walks
 rate = $\frac{70}{150} = 2.14$ seconds to walk 70 meters

equation Emile D/WR
 equation Henry $D/WR - HS$

initial value =
 $d = \text{distance (meters)}$ headstart
 $T = \text{seconds}$
 coefficient = rA
 multiplier