



# Grade 7 Student Strategies

Moving Straight Ahead, Problem 2.1



2.1

2.2

2.3

2.4

## 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.



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       $27 + 45 = 72$

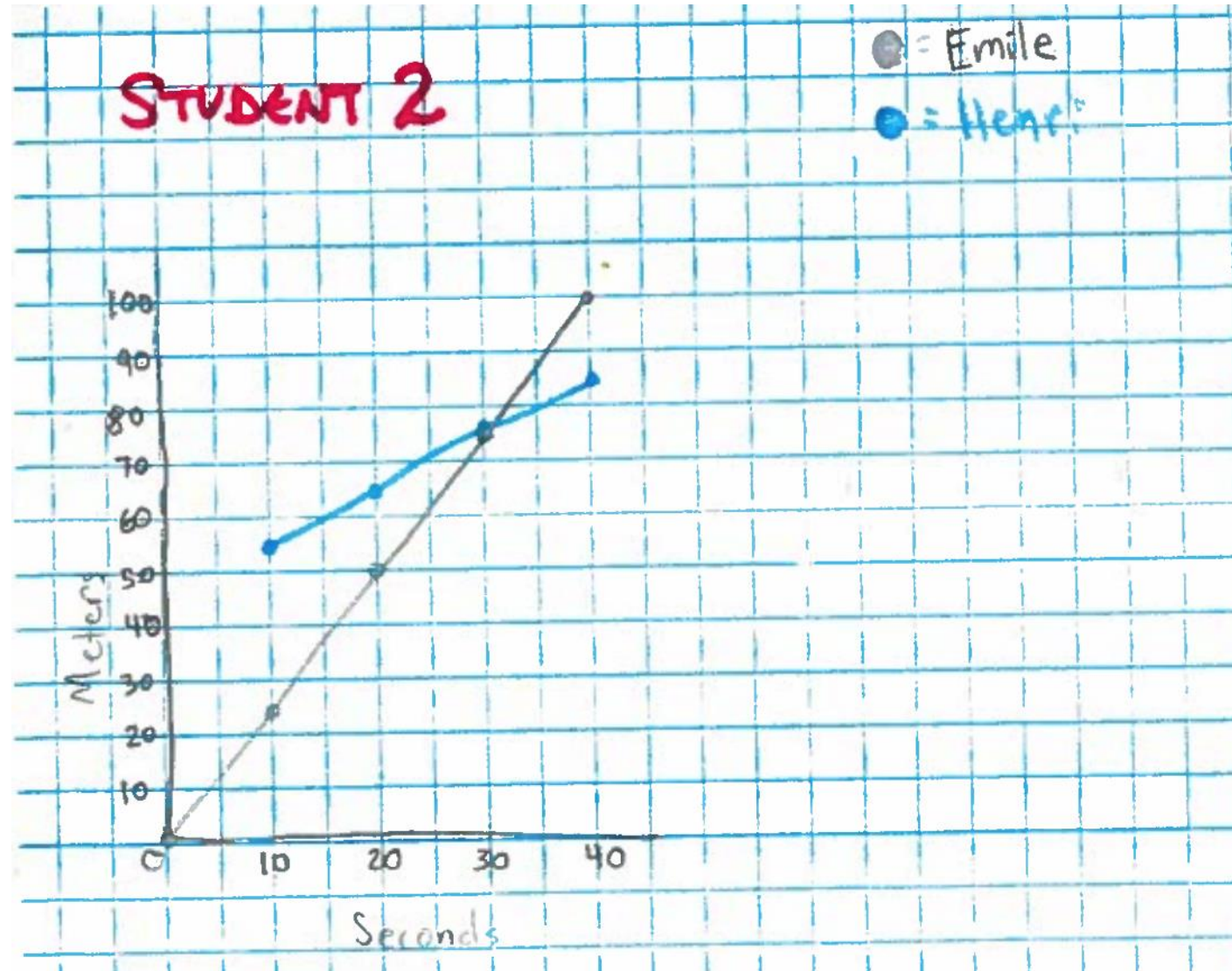
Emile       $2.5 \cdot 27 = 67.5$

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

45 sec

40 sec

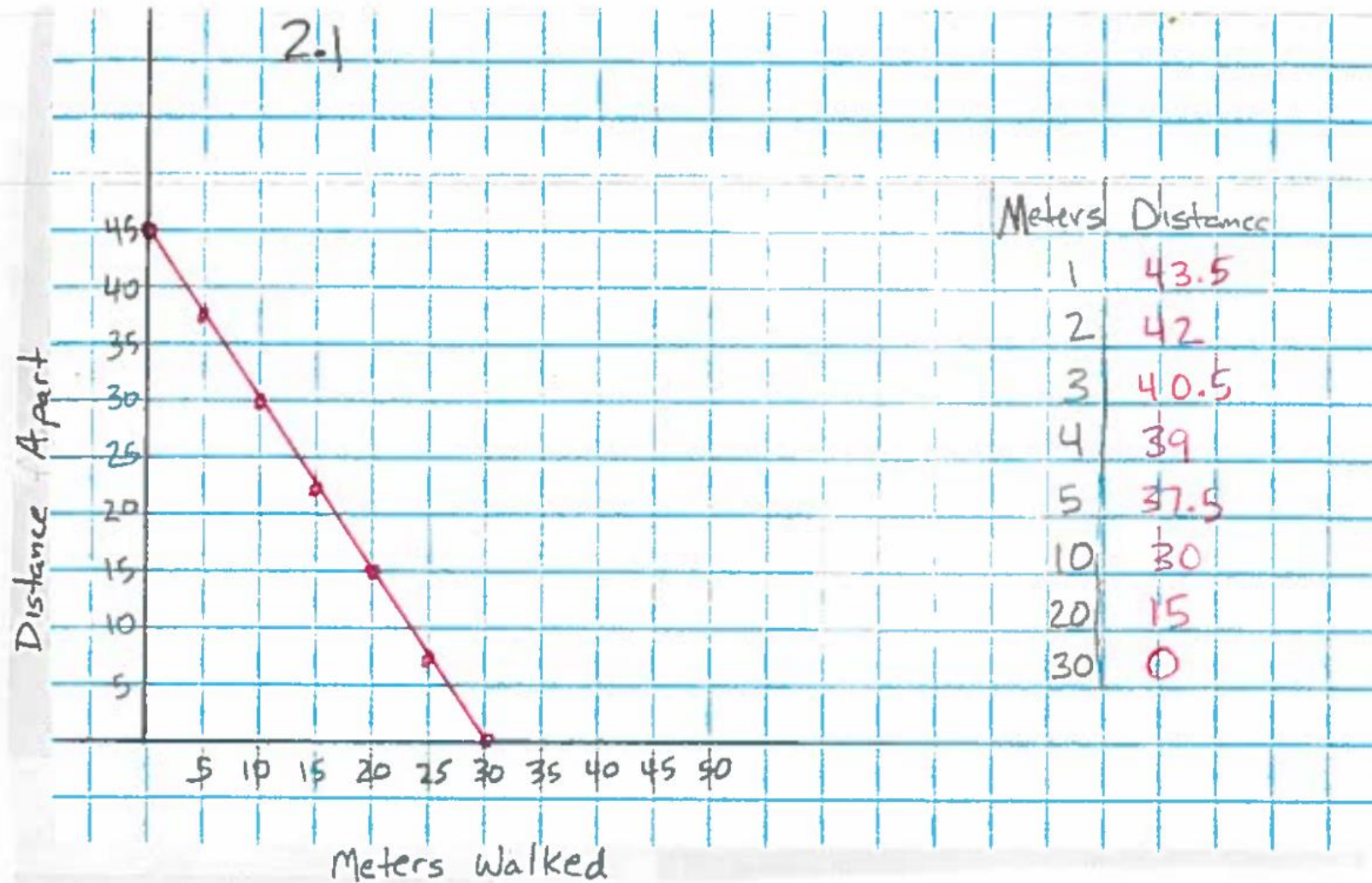
A 85 meter

B strategy

**STUDENT 3**



**STUDENT 4**

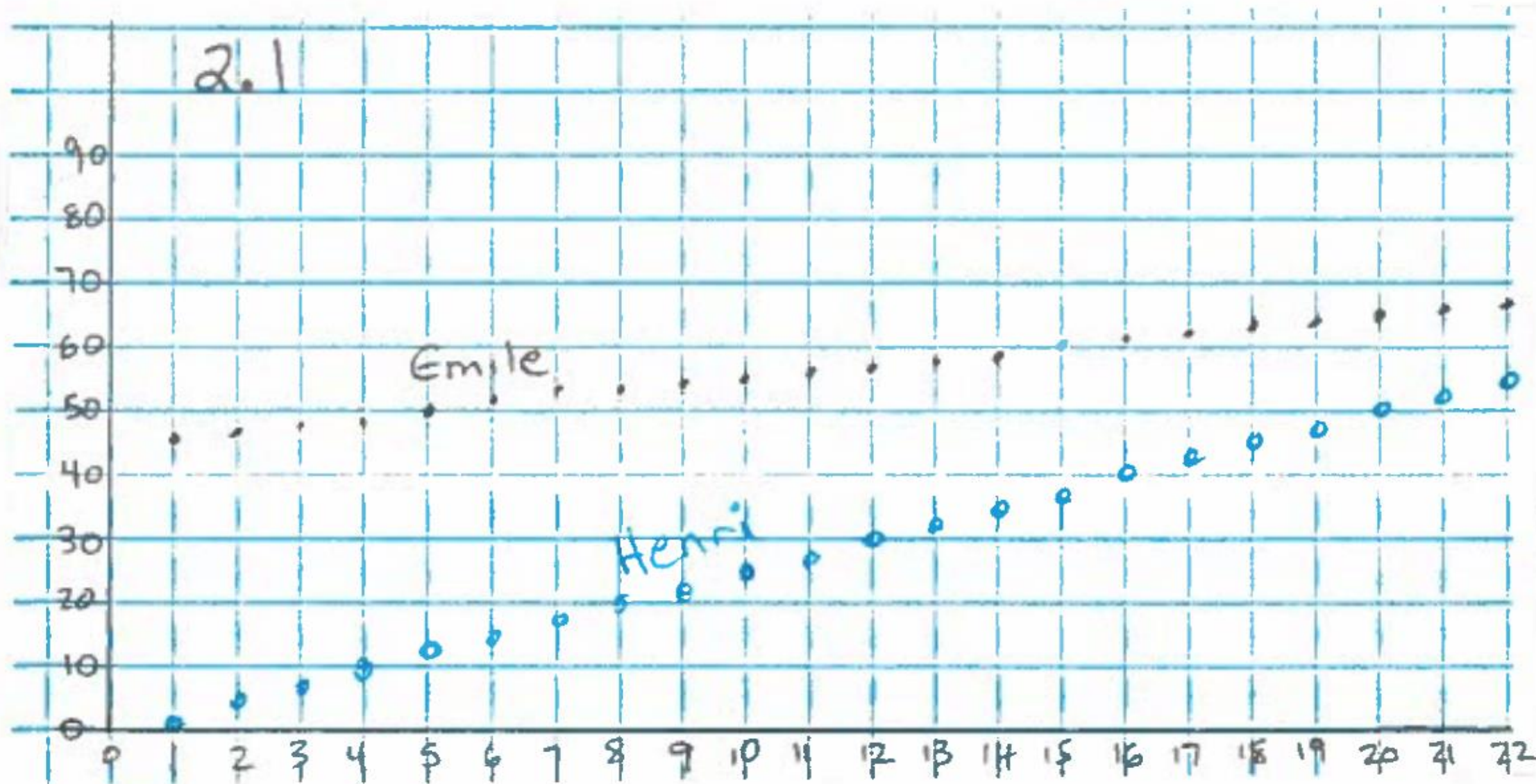


2.1

**STUDENT 5**

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

STUDENT 6







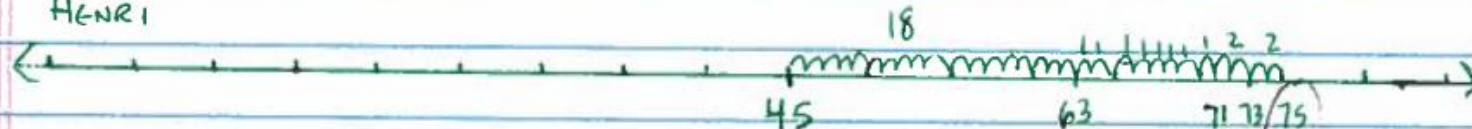
2.1

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

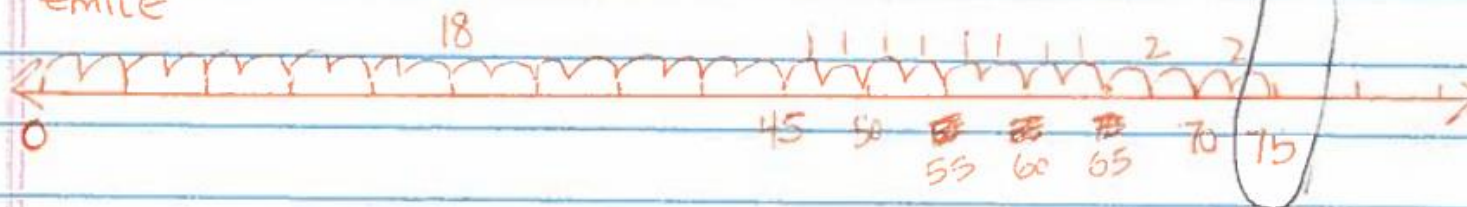
**STUDENT 8**

PROBLEM 2.1

HENRI



EMILE



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.

3-20-13

2.2

Bailey

A. Ende

70 In ~~10~~ Seconds

to 100 meters

1 mile goes 1 seconds

~~15~~ 750 seconds

Unit rate

henry

will get to

Notes: 1. 1985

5-45 newstart = (25)

75

45 Meters = 125 seconds  
+ 0.90 50 meters

3.

keep firing numbers to decide by there

walks rate so I did not I got

70 and  $70 \div 1$  is walking rate = 70 meters

70 seconds - 45 meter head start = 25 seconds to go

70 meters. Then Emily is just 70÷walking

rate = 2.5 = 2.5 seconds to walk 70 meters.

equation  $E_{\text{mile}}$  D/WTR

equation Henry D/WZ-HS

initial

Value =

$d$  = distance (meters)

$T = \text{seconds}$

headstart

$$\text{coefficient} = \mu_1$$

Multipliiert