

Math Enrichment Program

WELCOME!

Goal: You will analyze and solve linear problems.

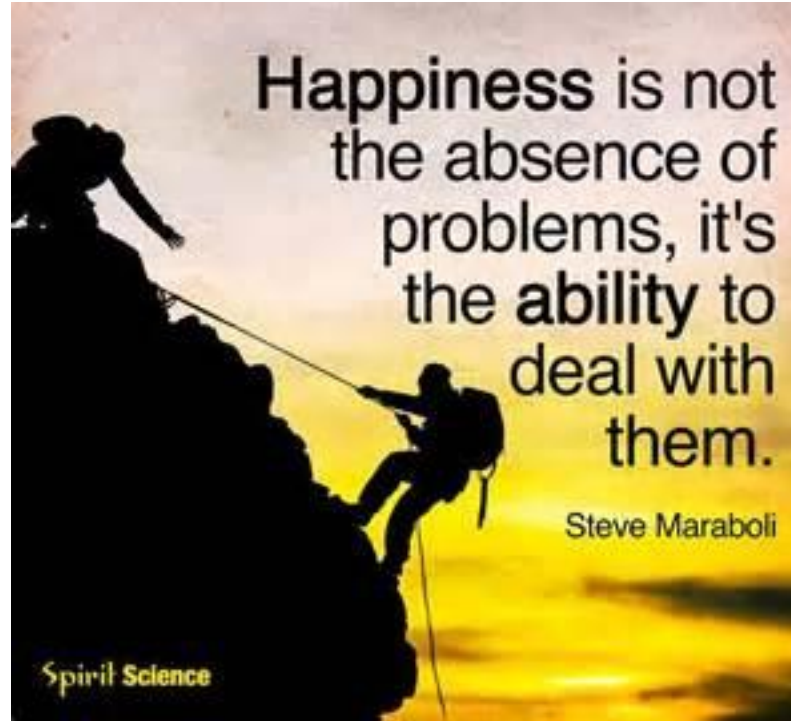
LINEAR APPLICATIONS

Day 9 Agenda:

- Warm up
- Pop up questions
- Lesson
- Exit reflection

DISCUSSIONS

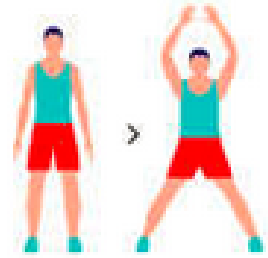
How can you apply this quote to your own life?



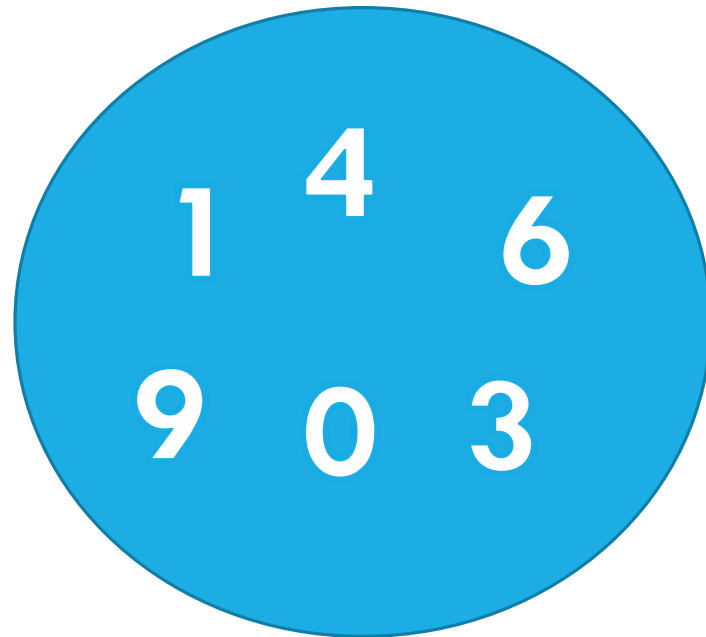
WARM UP

FILL IN THE BLANKS

PLACE ONE DIGIT IN EACH BOX TO MAKE THE STATEMENT TRUE



$$\sqrt{\square\square} + \sqrt{\square} = \sqrt{\square\square} - \sqrt{\square}$$



POP – UP #1

1) If $3y = 15x - 7$, then the slope of the line is

A) 15

B) -7

C) 3

D) 5



POP – UP #2

2) If $y - 5x + 4 = 0$, then the slope of the line is

A) 5

B) -5

C) 0

D) 4



POP – UP #3

For the linear function $y = 10.8x - 35$; if $x = 0$, then $y = ?$

A) 10.8

B) 0

C) -35

D) can't be found



POP – UP #4

4) Fill in the blank,

80, 40, 20, _____, 5, 2.5, ...

A) 15

B) 12

C) 10

D) No pattern



POP – UP #5

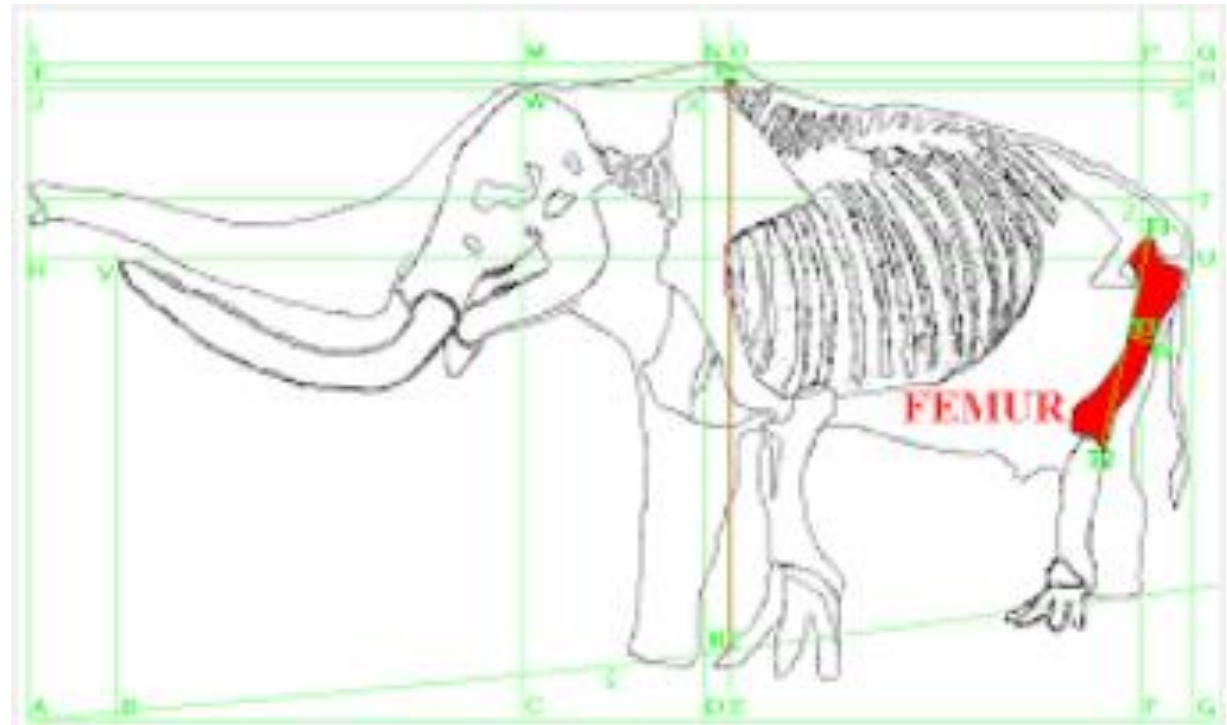
5) The graph of the linear function $y = -10$ is a vertical line.

A) True

B) False



HEIGHT VS. FEMUR LENGTH

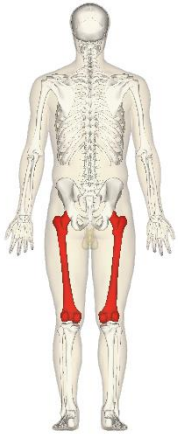


H = PERSON'S HEIGHT

F = FEMUR LENGTH

Males: $H = 27.5 + 2.24F$

Females: $H = 24 + 2.32F$



1) If a male femur is 20 inches long, about how tall is he?

2) If a woman is 68 inches tall, how long is her femur?

Males: $H = 27.5 + 2.24F$

Females: $H = 24 + 2.32F$

3) What do the numbers 2.24 and 2.32 tell us about the relationship between the femur length and the height of males and females?

4) What do the numbers 2.24 and 2.32 tell us about the patterns we would see in the tables and graphs of the (femur length, height) data?

H $27.5 + 2.24F$

Height	Femur Length
72.30	20
74.54	21
76.78	22

H $27.5 + 2.32F$

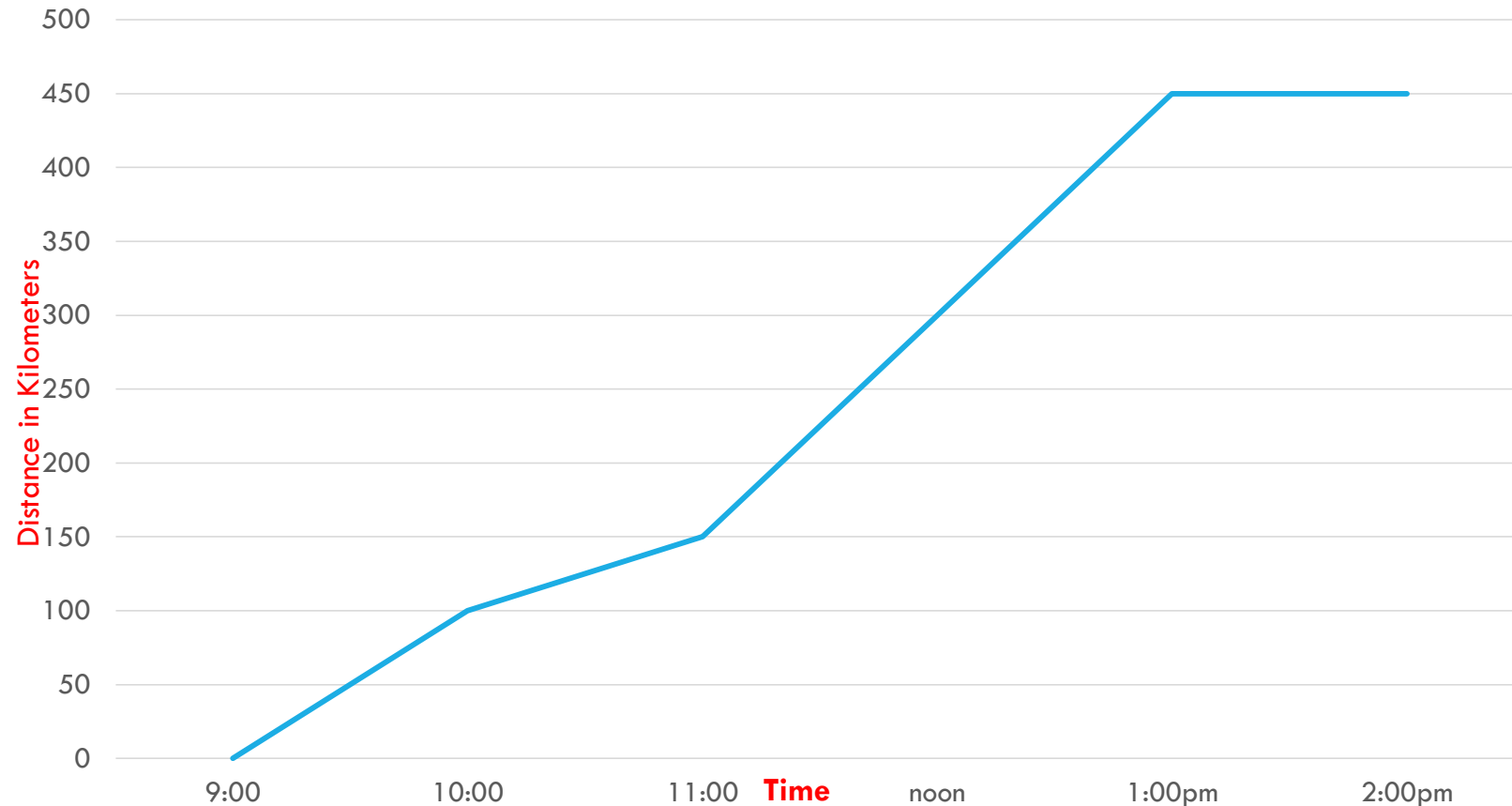
Height	Femur Length
70.40	20
72.72	21
75.04	22

ORIENT EXPRESS

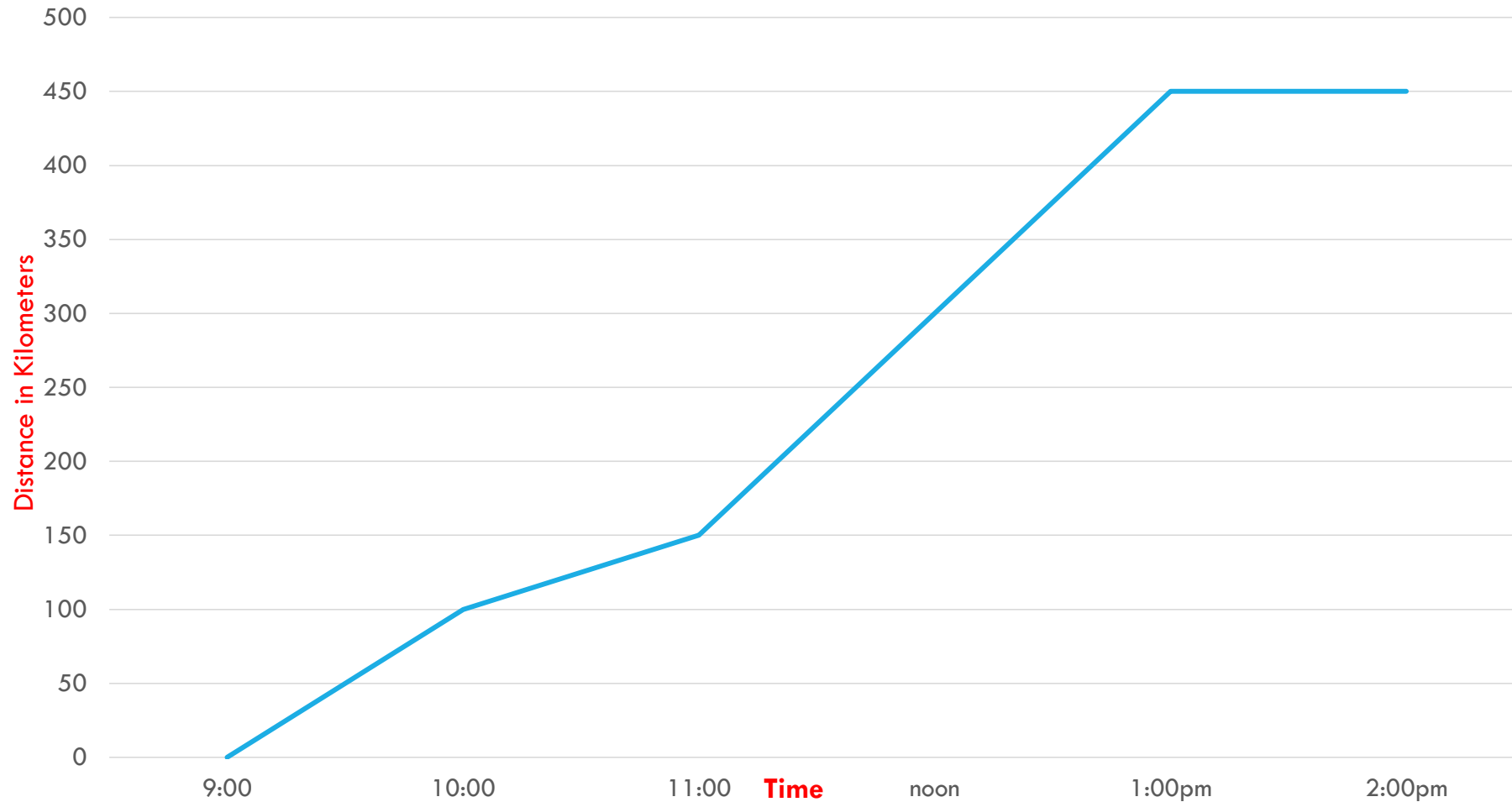


Graph shows the progress of the Orient Express on a trip from London to Paris

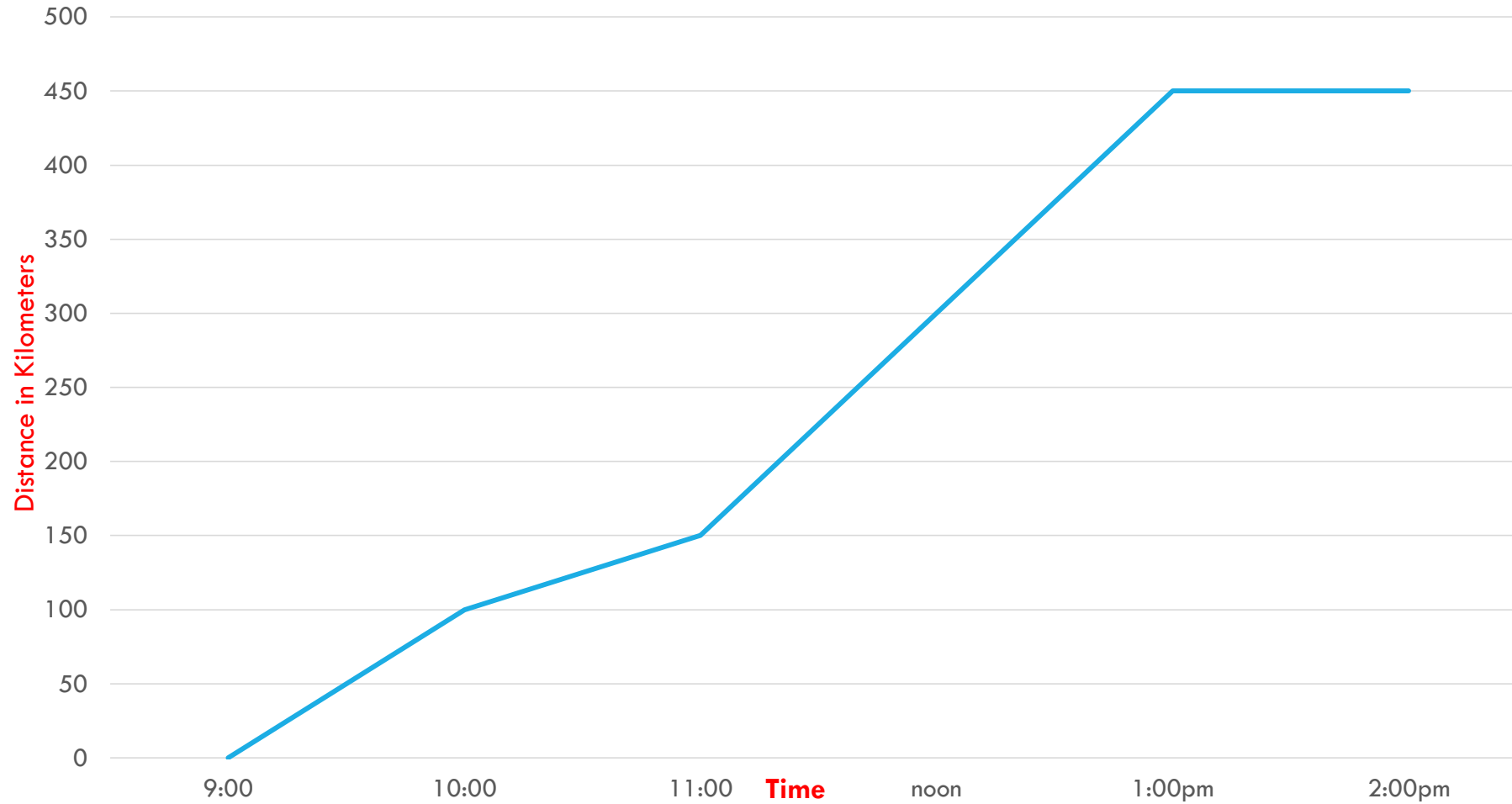
When was the train travelling the fastest? How can you tell without doing any calculations?



Write an equation for the part of the graph between 9am and 10 am.

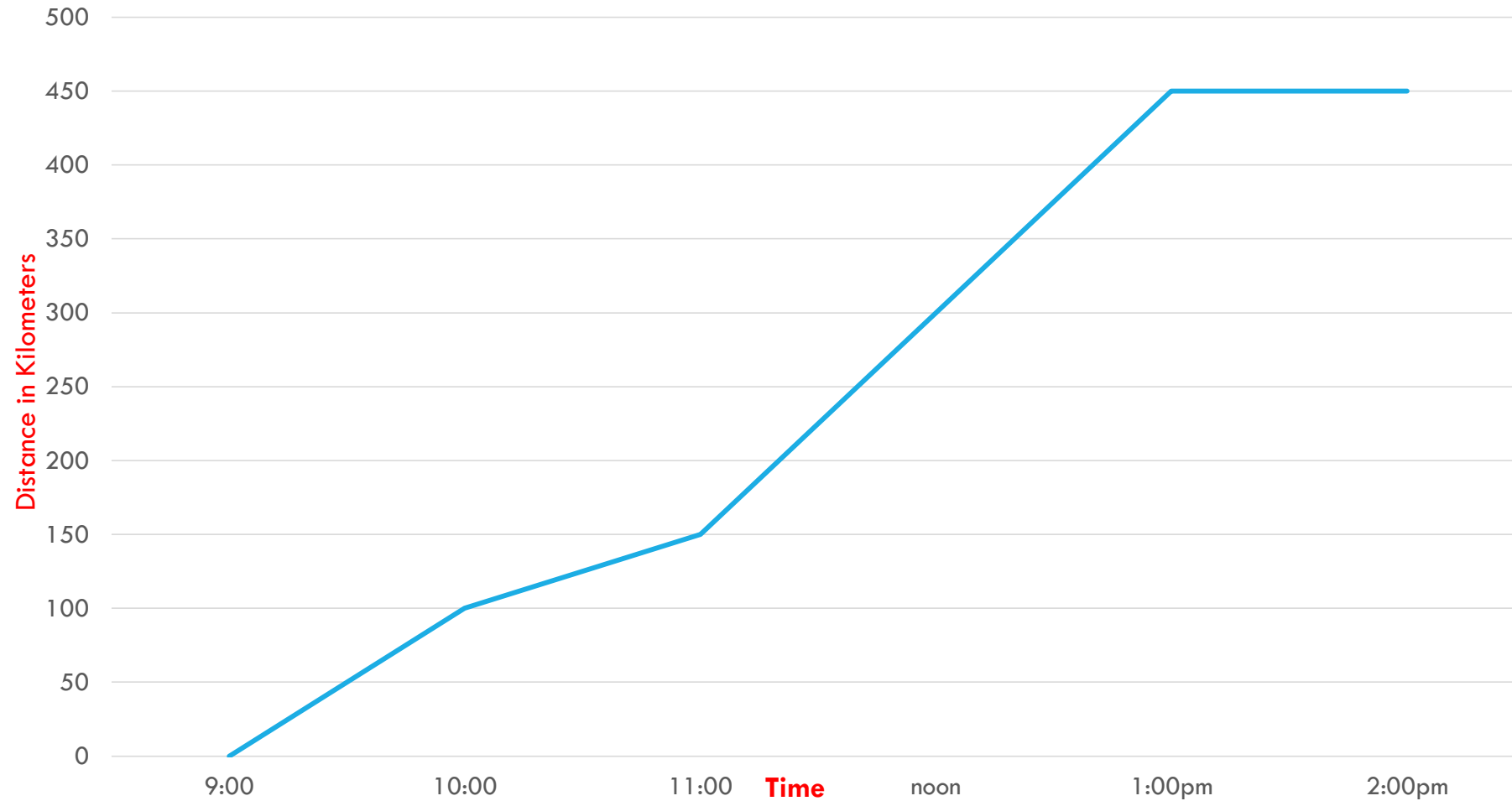


What is the slope of the graph between 1 and 2 pm? Describe the motion of the train at that time.



Describe the train journey from the graph in words.

We set off at 9:00 am at a constant speed of _____ ,then



Review:

Converting Standard Form to Slope-Intercept Form

$$Ax + By = C \quad \longrightarrow \quad y = mx + b$$

Write the instructions on how to convert a linear equation from standard to slope-intercept form:

Step 1:

Step 2:

Step 3:

$$x + 2y = 6$$

Slope =
y-intercept =

Review:

Converting Standard Form to Slope-Intercept Form

$$-6x - 3y = 12$$

Slope =

y-intercept =

$$-5x - 3y = -15$$

Slope =

y-intercept =

$$-2x + 8y = -32$$

Slope =

y-intercept =

Slope-intercept practice

<https://www.quia.com/rr/379720.html>

Rags to Riches

Start

SNAP SHOT

Please write on the board

Write **TWO** things you learned **TODAY**