Proportionality

Answer the questions below:

A student has measured the distance from her house to school as 1215.08 metres.

1. How many significant figures are there in this distance?
   6
2. Round the distance to 2 significant figures.
   1200 m
3. Convert the distance into kilometres.
   1.21508 km
4. Round your answer for Q3 to two decimal places.
   1.22 km
5. Suggest how the student could measure her speed as she walks to school.
   Record how long (time) it takes for her to get to school, then use the calculation: $Speed = \frac{Distance}{Time}$

Do Now

28/04/2024

Proportionality

Maths in Science Lesson 13

Science
Mastery



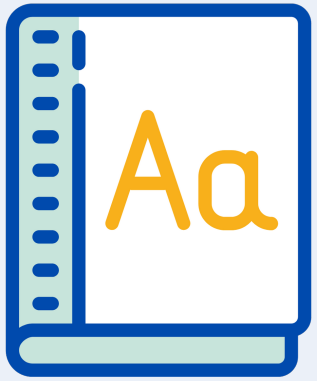
Lesson 9: Mean, Median and Mode
Lesson 10: Fractions
Lesson 11: Percentages
Lesson 12: Significant Figures
➢ **Lesson 13: Proportionality**
Lesson 14: Angles

Lesson Objectives

Following this lesson, students will be able to:

- Identify directly proportional relationships
- Identify inversely proportional relationships

Key Words:



directly proportional

inversely proportional

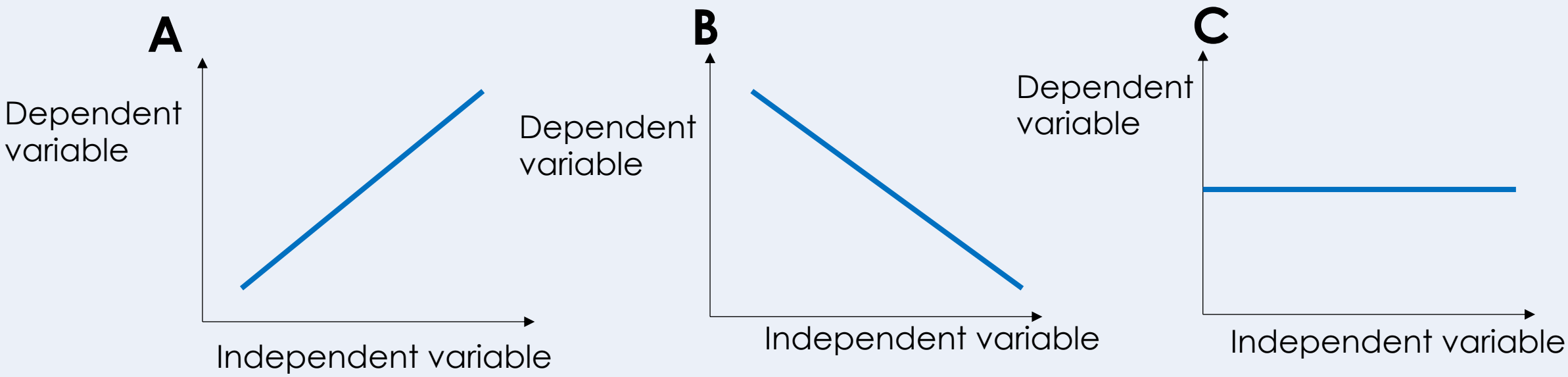
This is the fix-it portion of the lesson

The **fix-it** is an opportunity to respond to gaps in knowledge, especially those identified by the previous lesson's exit ticket.

- The teacher should customise this slide as needed, to facilitate
  - **reteach**, **explanation, demonstration** or **modelling** of ideas and concepts that students have not yet grasped or have misunderstood.
  - **practise** answering specific questions or of key skills.
  - **redrafting** or **improving** previous work.

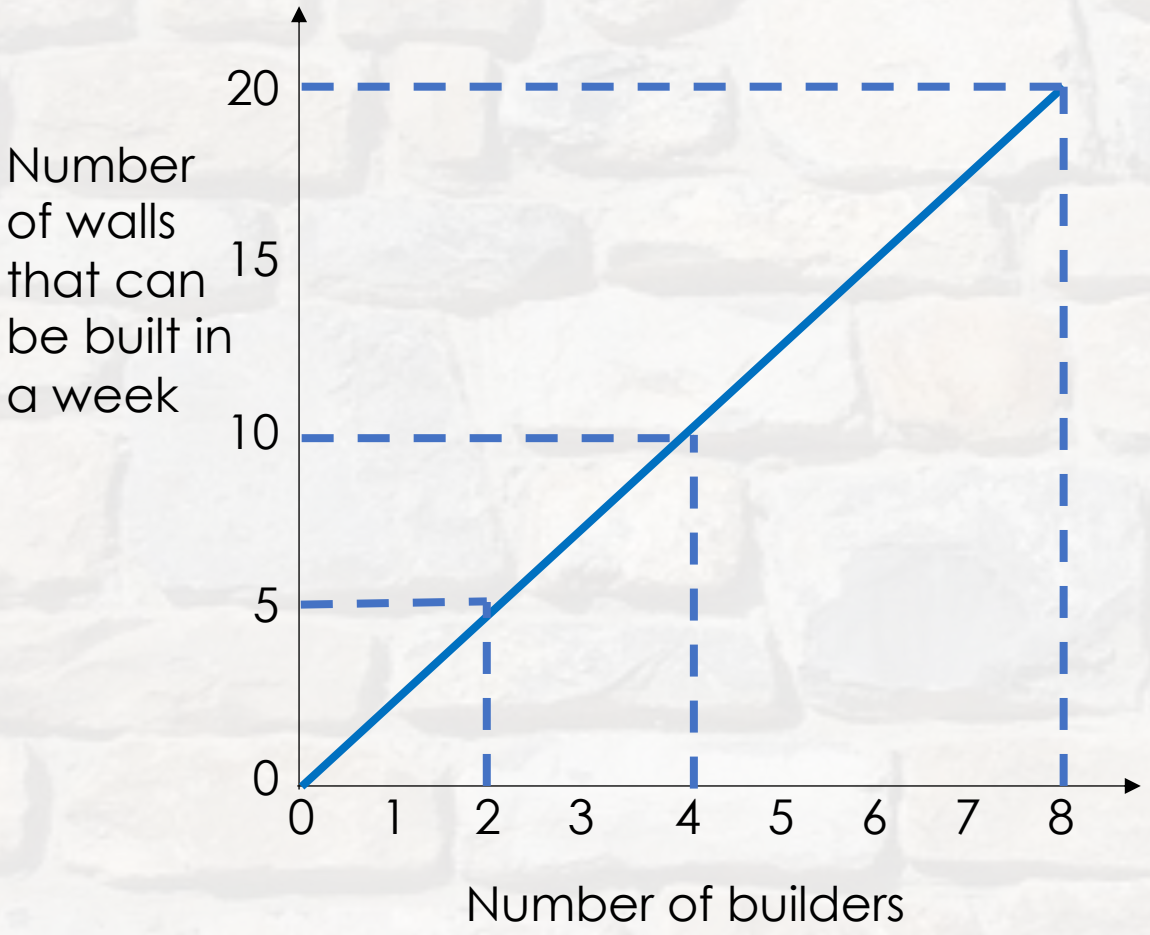
Fix-it

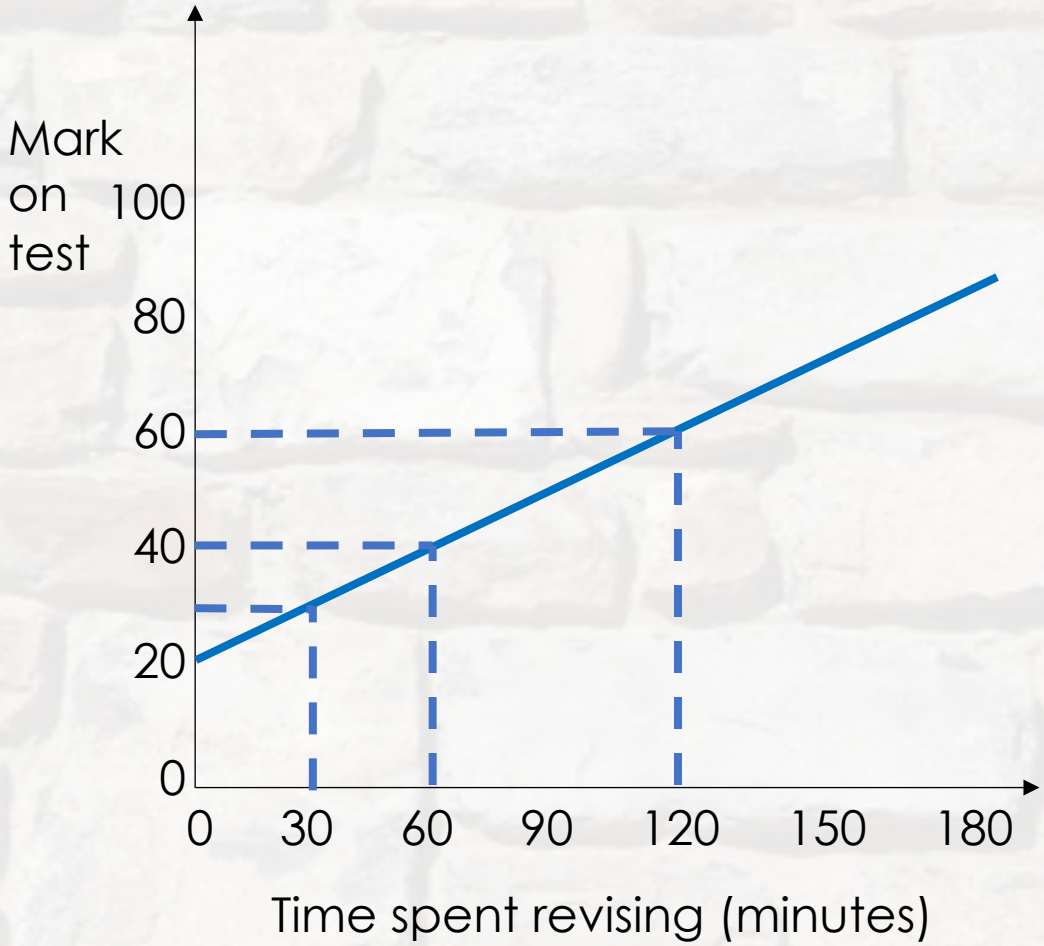
Describing graphs



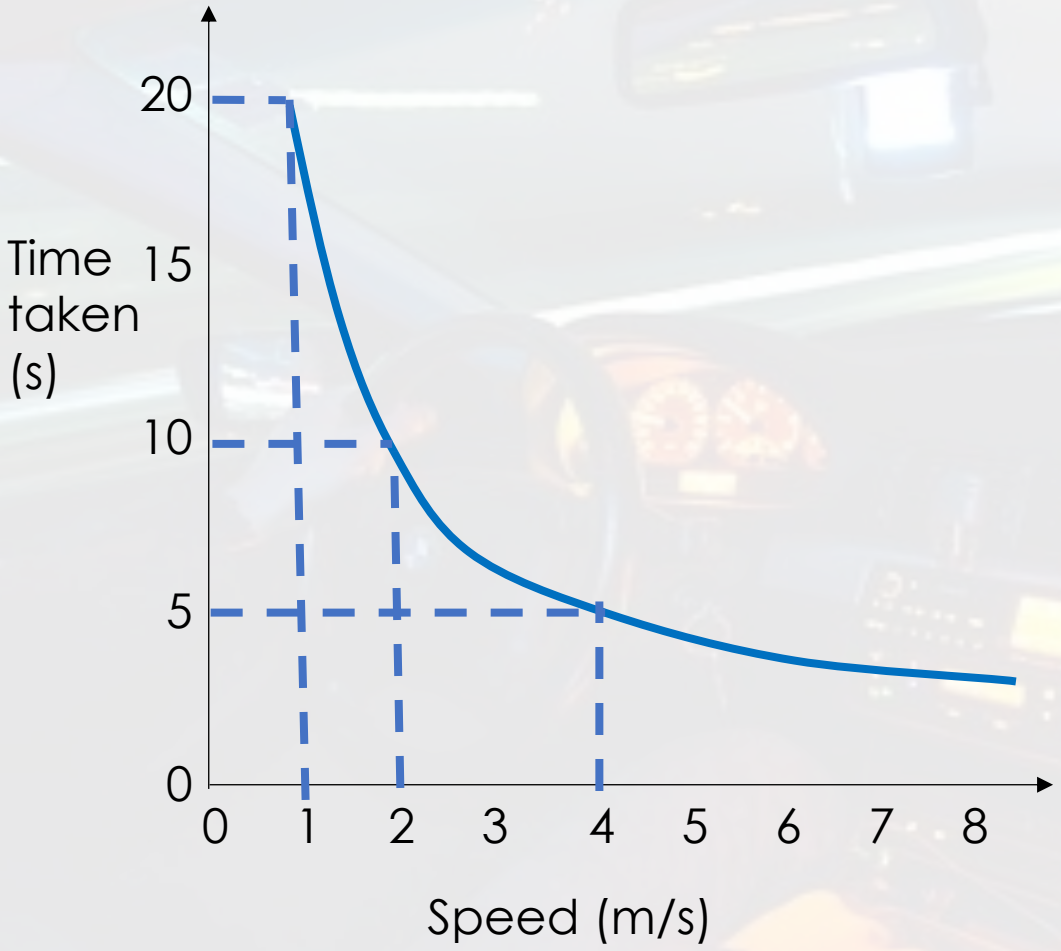
What pattern is shown by each graph?

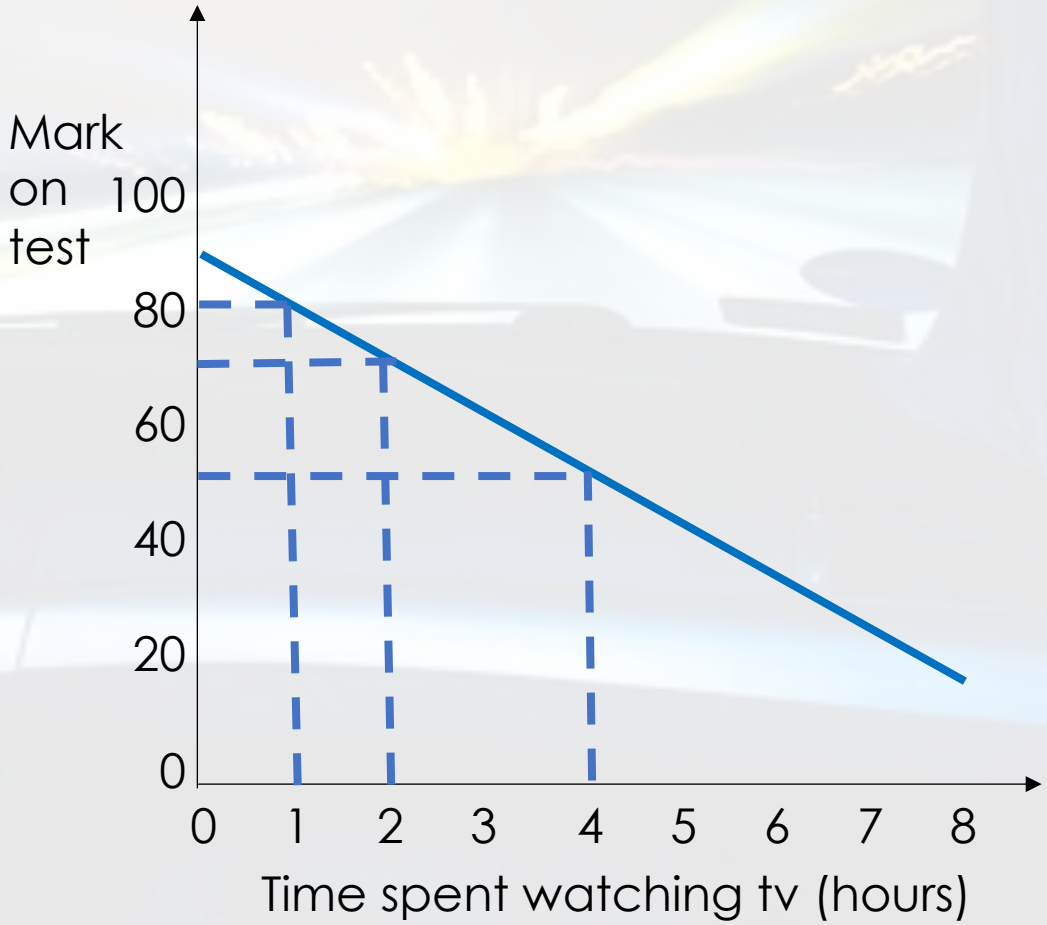
Direct Proportion





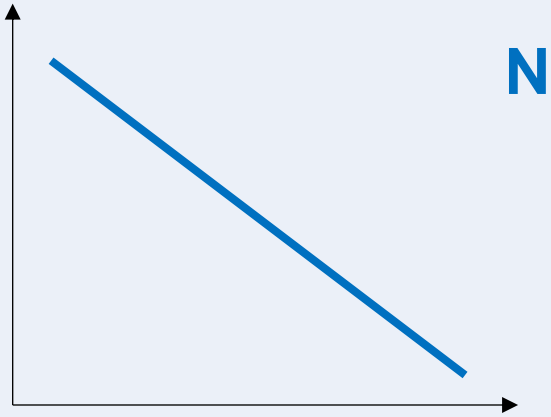
Inverse Proportion





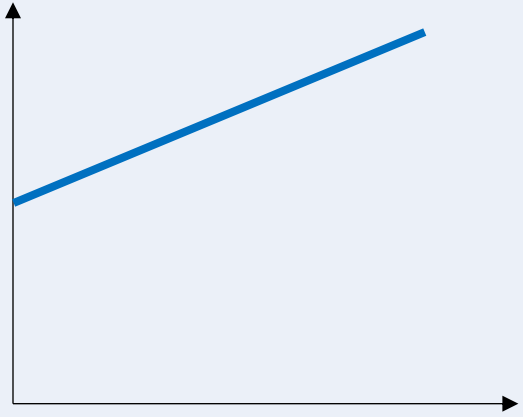
Which of these graphs show a directly proportional relationship, an inversely proportional relationship or neither?

A



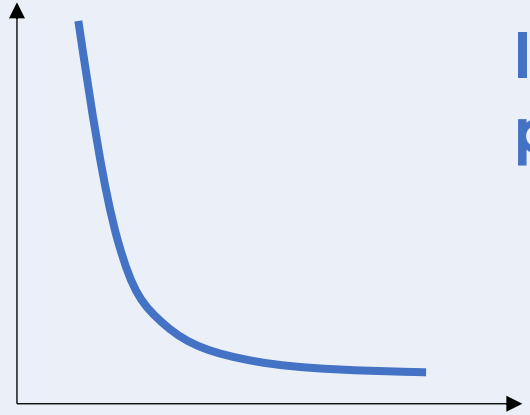
Neither

B



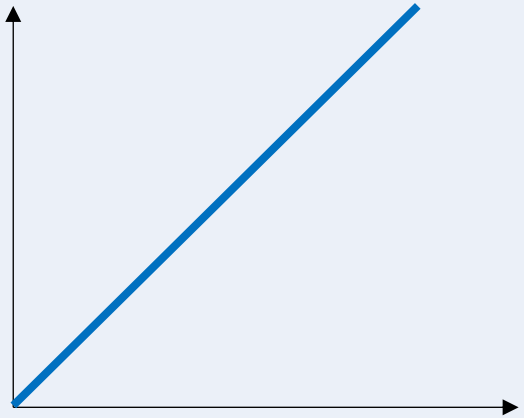
Neither

C



Inversely proportional

D



Directly proportional

Check for understanding

Which statements do you agree with?

Indirect proportion is when one variable doubles and the other halves.

Direct proportion is when one variable increases, so the other also increases.

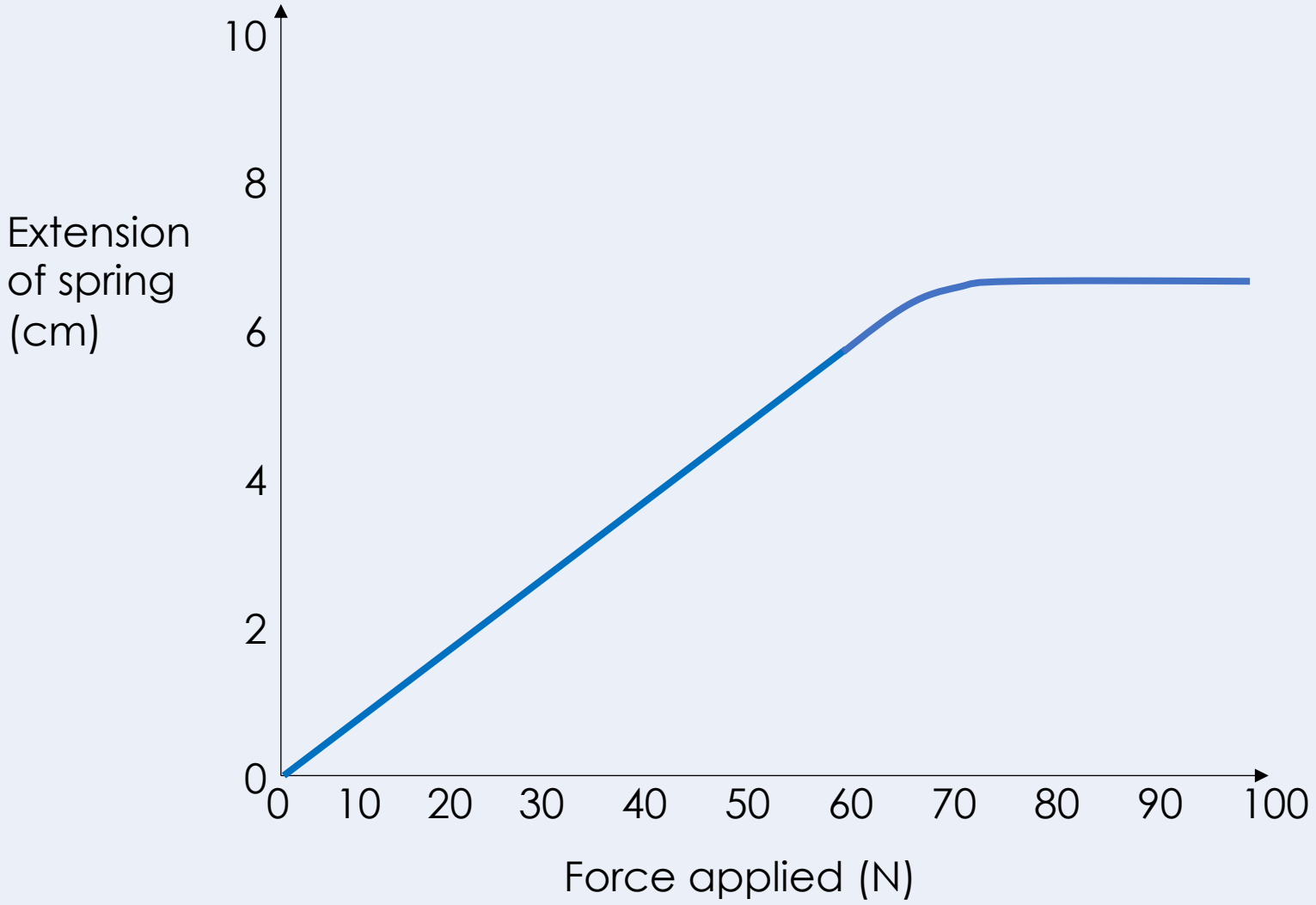
Inverse proportion is when one variable increases and the other decreases.

Direct proportion is when both variables change at the same rate.

Talk Task

Is this graph directly proportional?

Does the force applied to a spring affect its extension?

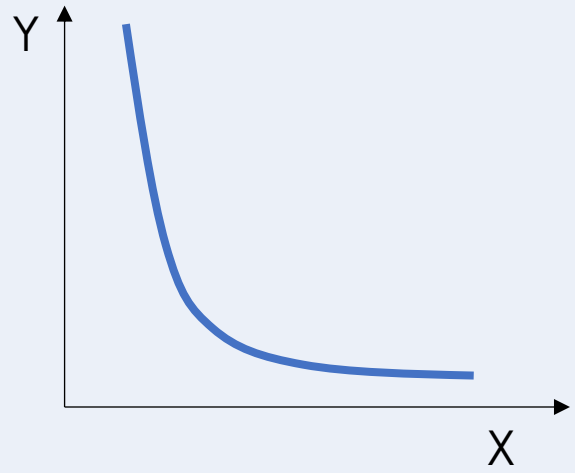




Talk Task

Answer the questions below.

1. Which best describes the relationship shown by this graph?



- ☐ A. X and Y are directly proportional to each other
- ☑ B. X and Y are inversely proportional to each other
- ☐ C. X and Y are indirectly proportional to each other

2. Voltage and current are directly proportional to each other. This means that when voltage doubles…

- ☑ A. Current also doubles
- ☐ B. Current is halved
- ☐ C. Current is the same as voltage

3. Resistance and current are inversely proportional to each other. This means that when resistance is halved…

- ☐ A. Current is also halved
- ☑ B. Current doubles
- ☐ C. Current does not change

Exit ticket

Feedback

Maths in Science Lesson 13	
What was good about this lesson?	What can we do to improve this lesson?

Send us your feedback by clicking this link. Thank you!