



Advanced Mathematics Support Programme

In this session we will look at how the new
Advanced Mathematics Support
Programme can support your centre to
develop and run the new level 3 Core
Maths qualification

Make a wish list

Take a few moments to list the support you would like, a wish list.

An overview of the planned provision

1. Provide professional development to enhance Core Maths, AS/A Level Maths & Further Maths courses.
2. Provide teaching resources.
3. Provide student enrichment and support.
4. Provide support for problem solving and university entrance tests.
5. Provide support for Opportunity/Priority Areas.

1. Provide professional development to enhance Core Maths, AS/A Level Mathematics & Further Mathematics courses.
 - Sustained professional development for A Level Further Maths or A Level Maths. (*TFM, TAM, TS1&2, TM1&2, TD...*)
 - Short professional development courses for Core Maths, A Level Further Maths and A Level Maths. (*One day and online courses*)
 - Short PD courses for higher-level problem-solving (HLPS) and university entrance test preparation support.
 - Network meetings for Core Maths (*linked to hub workgroups*), and A Level Further Maths, A Level Maths.
 - Online on-demand professional development for aspects of Core Maths and Further Mathematics.

Core Maths face to face PD - Year 1 2018 - 2019

- **18 Large regional events split into two phases**

Phase 1 (now – Oct 2018) – Aimed at centres wishing to start Core Maths for the first time, or those in the early stages of developing Core Maths.

Phase 2 – (Dec 2018 – Jan 2019) – Aimed at centres teaching Core Maths.

- **25 One day courses organised through AMSP area coordinator**

A series of centrally written courses that can be tailored to match local needs.

- (Nov 2018) and (Mar 2019)

- **2 LOPD cohorts** (capacity 20) enrolment (Jan 2019 – Mar 2019).

- **20 One day courses for ITT/PGCE students** (Nov 2018- Mar 2019).

- **18 Series of 3 workshops linked to NCETM Maths Hubs workgroups** (Oct 2018 – Feb 2019).

2. Provide teaching resources.

- Access to Integral online resources for AS/A Level Further Maths.
- Transfer of existing FMSP resources to AMSP.
- Development and trial of online resources for Core Maths including video content.

 **AMSP Core Maths development**

Dashboard ▶ My courses ▶ Core_development ▶ Correlation ▶ Correlation alt nav 1

LESSON MENU

Introduction
When should data be removed?
Checking you answer
Comparing correlations
Check your answer
Using r to compare the strength of correlations

[↑ Back to 'Correlation'](#)

Correlation alt nav 1

Gathering Data

A class of students have been given a project investigate our diet in England.

Jake and Abdul, believe that people on low incomes consume more fast food then those on higher incomes.

They wish to see if there is any evidence to support this theory and discuss two options.

Option 1 – Make an online questionnaire which asks people about their fast food consumption and income.

Option 2 – Get some national data about incomes, and fast food consumption.

Write a short passage explaining which option you would advise and why.

This video clip may help -

Username	Password	URL
conf-guest50	changeme	https://integralmaths.org
conf-guest51	changeme	https://integralmaths.org
conf-guest52	changeme	https://integralmaths.org
conf-guest53	changeme	https://integralmaths.org
conf-guest54	changeme	https://integralmaths.org
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conf-guest65	changeme	https://integralmaths.org
conf-guest66	changeme	https://integralmaths.org
conf-guest67	changeme	https://integralmaths.org
conf-guest68	changeme	https://integralmaths.org
conf-guest69	Changeme1	https://integralmaths.org

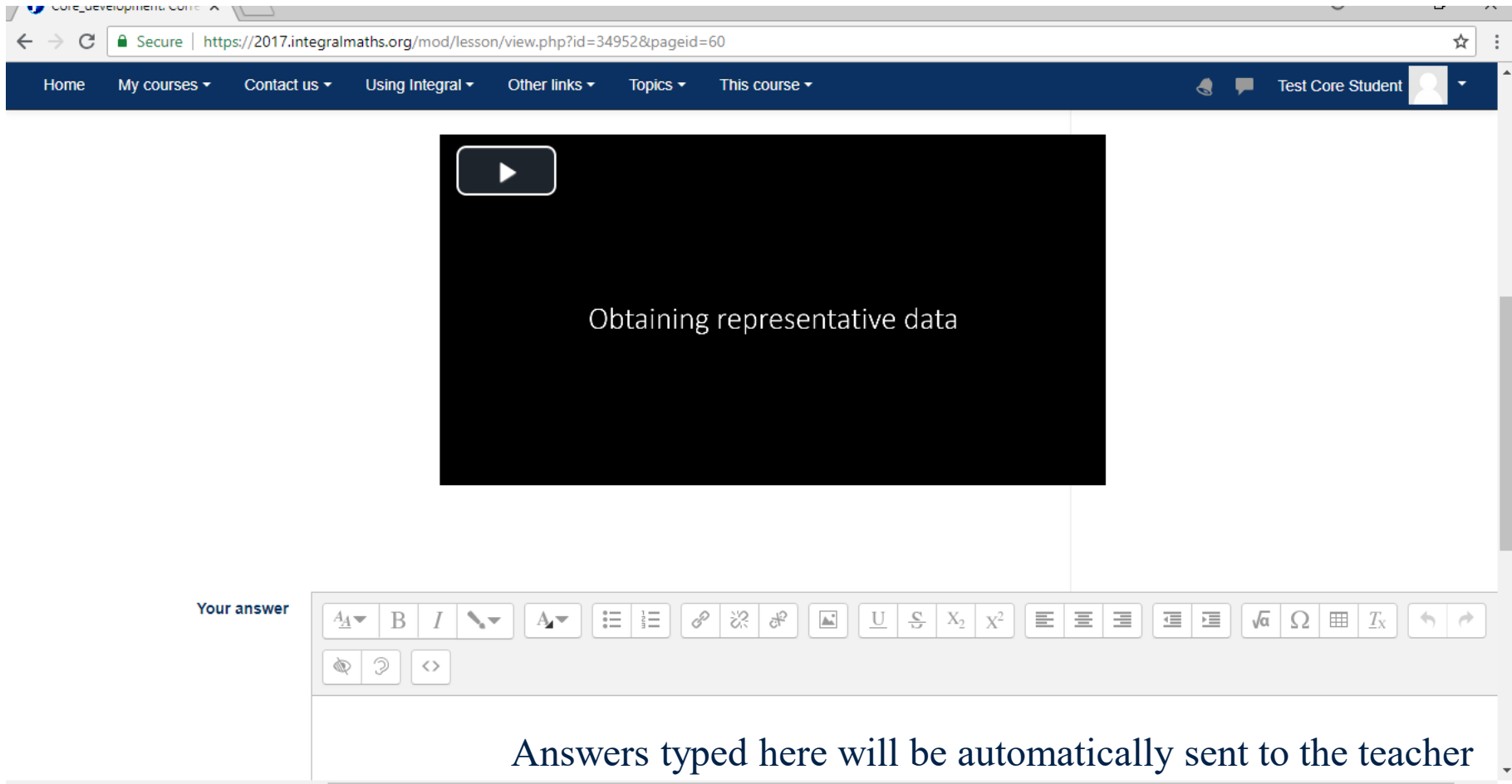
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Test Core Student

Obtaining representative data

Your answer

Answers typed here will be automatically sent to the teacher



Core_development: Corre x

Secure | <https://2017.integralmaths.org/mod/lesson/view.php?id=34952&pageid=79>

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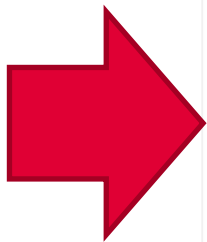
Test Core Student

Product moment correlation coefficient (r)

Sometimes referred to as the Pearson product moment correlation coefficient

$$r = \frac{S_{xy}}{\sqrt{S_{xx}S_{yy}}}$$

Activities which require students to use software



This file contains Julia and Shezan's data, follow the steps on the clip and work out the product moment correlation coefficient of this data. *The columns have been added to get you started.*

next

You have completed 44% of the lesson

44%

- Checking your answer
- Comparing correlations
- Check your answer
- Using (r) to compare the strength of correlations

Check your answer

Here is a screenshot of my completed spreadsheet showing the product moment correlation coefficient (r) for Julia and Shezan's data.

	A	B	C	D	E	F	G	H	I	J
321	319	Wyre	48.4	2342.56	102.1	10419.61	4940.50			
322	320	Wyre Forest	45.7	2088.49	85.9	7377.66	3925.32			
323	321	York	37.9	1436.41	98.8	9762.82	3744.78			
324	n		Σx_i	Σx_i^2	Σy_i	Σy_i^2	$\Sigma x_i y_i$			
325	321		13407.2	567513.9	25997.1	2303011.2	1067927.6			
326			S_{xy}	-17891.32461						
327			S_{xx}	7535.66997						
328			S_{yy}	197567.32834						
329										
330										
331			r	-0.46369						
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Product moment correlation coefficient (r)

$$r = \frac{S_{xy}}{\sqrt{S_{xx}S_{yy}}}$$

$$S_{xy} = \sum x_i y_i - \frac{(\sum x_i)(\sum y_i)}{n}$$

$$S_{xx} = \sum x_i x_i - \frac{(\sum x_i)(\sum x_i)}{n} = \sum (x_i^2) - \frac{(\sum x_i)^2}{n}$$

$$S_{yy} = \sum y_i y_i - \frac{(\sum y_i)(\sum y_i)}{n} = \sum (y_i^2) - \frac{(\sum y_i)^2}{n}$$

Next

You have completed 50% of the lesson




Some auto marked activities



Core_development: Corre X

Secure | <https://2017.integralmaths.org/mod/lesson/view.php?id=34952&pageid=86>

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Test Core Student 

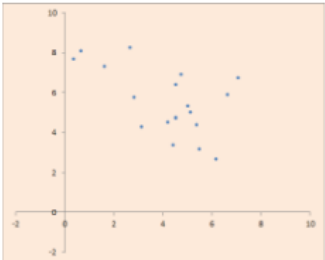
Comparing correlations
 Check your answer
 Using (r) to compare the strength of correlations

COMMENTS  

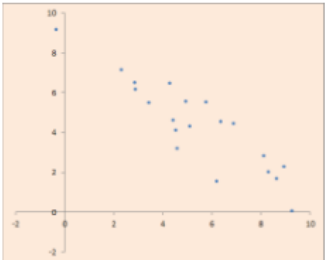
Add a comment...

Save comment

Match the diagrams with the correct r values.



Choose... ▾
 Choose...
 r = 0.4
 r = -0.8
 r = 0.9
 r = -0.4



Choose... ▾

Use the information below to calculate r . Type your answer (to 3 d.p.) in the box below.

Figures for the Euro NCAP data

Σx_i	1587
$\Sigma(x^2)_i$	128625
Σy_i	1240
$\Sigma(y^2)_i$	86235
$\Sigma x_i y_i$	104859

Product moment correlation coefficient (r) $r = \frac{S_{xy}}{\sqrt{S_{xx} \cdot S_{yy}}}$

$$S_{xy} = \sum x_i y_i - \frac{(\sum x_i)(\sum y_i)}{n}$$

$$S_{xx} = \sum x_i x_i - \frac{(\sum x_i)(\sum x_i)}{n} = \sum(x^2)_i - \frac{(\sum x_i)^2}{n}$$

$$S_{yy} = \sum y_i y_i - \frac{(\sum y_i)(\sum y_i)}{n} = \sum(y^2)_i - \frac{(\sum y_i)^2}{n}$$

Your answer

Submit

You have completed 81% of the lesson 81%

Working with centres to develop resources

We are intending to develop these resources by working with 30 centres.

If you think your centre would be interested in working with us, please let me know.

terry.dawson@mei.org.uk

3. Student enrichment and support

- AS/A Level Further Maths tuition support.
- 11-16 enrichment events.

(Some of the above will cover Core Maths - Area coordinators)

- Year 10 Maths Feast.

Enrichment activity -

- Lobster pots

4. Support for problem solving and university entrance tests

- Regular support for higher-level Mathematics problem-solving and preparation for university Mathematics entrance tests.
- 16-19 problem-solving enrichment event.
- Senior team maths challenge.
- Advice and guidance to students and liaison with HEIs over entry requirement information.

5. Support for Opportunity/Priority Areas

- Supporting Low Participation Area and Opportunity Area schools and colleges to plan for Level 3 Maths provision.
- Encourage centres to participate in AMSP events, and make the most of the support available.

What's missing from your wish list?

Summary of the AMSP aims

- Increase participation and attainment in the study of Level 3 Mathematics qualifications.
- Improve the availability, capacity and quality of Level 3 Mathematics provision.
- Engage with a wide range of stakeholders to raise awareness amongst Year 10 and 11 students, and their parents/carers, of the benefits of studying Mathematics beyond GCSE.
- A strong focus on the DfE's Opportunity Areas and other areas of low Level 3 Mathematics participation, with the aim of improving social mobility.
- Increase the up-take of Core Maths qualifications.
- The programme will also ensure that students in all 16-19 state-funded schools and colleges can access AS and A Level Further Mathematics provision, alongside AS and A Level Mathematics.

About the AMSP

- A government-funded initiative, managed by MEI, providing national support for teachers and students in all state-funded schools and colleges in England.
- It aims to increase participation in AS/A Level Mathematics/ Further Mathematics, Core Maths and improve the teaching of these qualifications.
- Additional support is given to those in priority areas to boost social mobility so that, whatever their gender, background or location, students can choose their best Maths pathway post-16, and have access to high quality Maths teaching.

The AMSP holds the NCETM CPD Standard

The CPD Standard supports Maths teachers to access information about the wide range of CPD provision on offer and to be assured of its appropriateness and quality.

ncetm.org.uk/cpdstandard

Continuing Professional
Development
Standard

National Centre
for Excellence in the
Teaching of Mathematics

