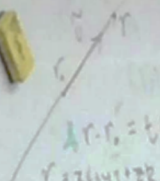


$$r = xi + yj + zk$$
$$(r - r_0) \cdot n = 0 \quad \text{parametric 1.}$$



$$r \cdot n = t \cdot n$$
$$r = xi + yj + zk$$

First year board tutorials

in the School of Mathematics and Statistics,
University of Sydney

Focus of Communication:

- * Speaker

- * Content

- * Audience/listener

Focus of Communication:

* Speaker





* Content

 * Student

Tutorials are not just about content but also **attitudes**

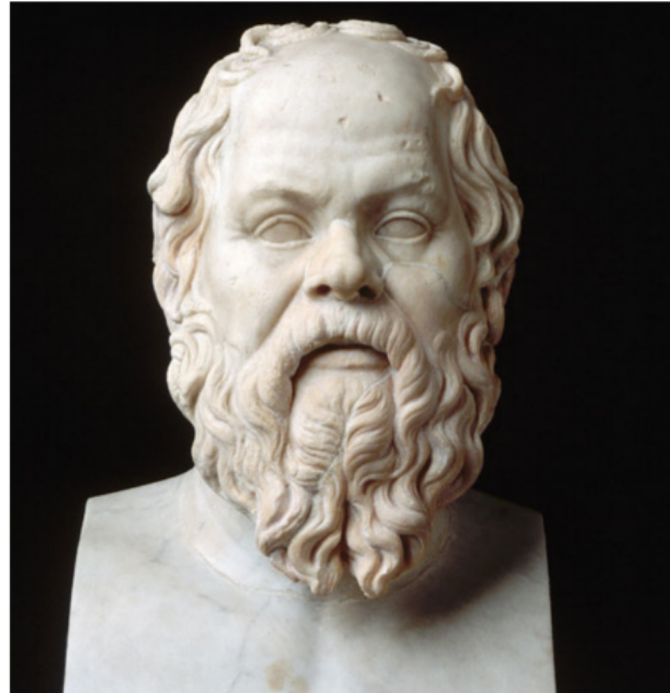
- * confidence
- * mathematics as a collaborative, communal activity
- * getting it wrong to learn to get it right
- * grasping where and how maths is useful

Board tutorials: the basics







-  Students in groups of 2 to 4
-  Each group collaboratively works on whiteboard
-  Tutor circulates **systematically**, asking questions, giving feedback, nudging students where needed
-  Tutor addresses whole class if and only if there is a major problem.

Socratic method






Ask questions,
rather than instruct.



Practical considerations:

-  Keep circulating
-  BYO whiteboard markers (and collect them at the end)
-  Ask students to write their names on the board
-  Move the furniture away from the boards
-  Students can record their work by taking a photo
-  Make sure students rub off their board before they leave

“Social” problems:

-  Cultural shift required of students
-  Students don't want to work on the board
-  Students don't want to work in groups
-  A group is dysfunctional
-  Some groups monopolise tutor attention

EQUITY:



Our students are diverse:
Make sure everyone gets
a fair go

- 🐧 Who do you give attention to?
- 🐧 How do you talk to people?
- 🐧 How do you listen to people?
- 🐧 What assumptions do you make about people?

Support for new board tutors:

Mentoring

Experienced tutors and lecturers

Peers

Director of Summer School and Chair of APC

Don't stew over it: ASK!