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Welcome to the MEI conference 2026

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How technology can change the way your students think about geometry

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Using the Desmos Geometry tool

Gallery of files:

www.desmos.com/gallery/c9c27a4f-5217-49ab-bc82-034a9da54270

Getting Started

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Creating dynamic families

- Use of dynamic representations allow you to ‘see’ entire families of geometric objects

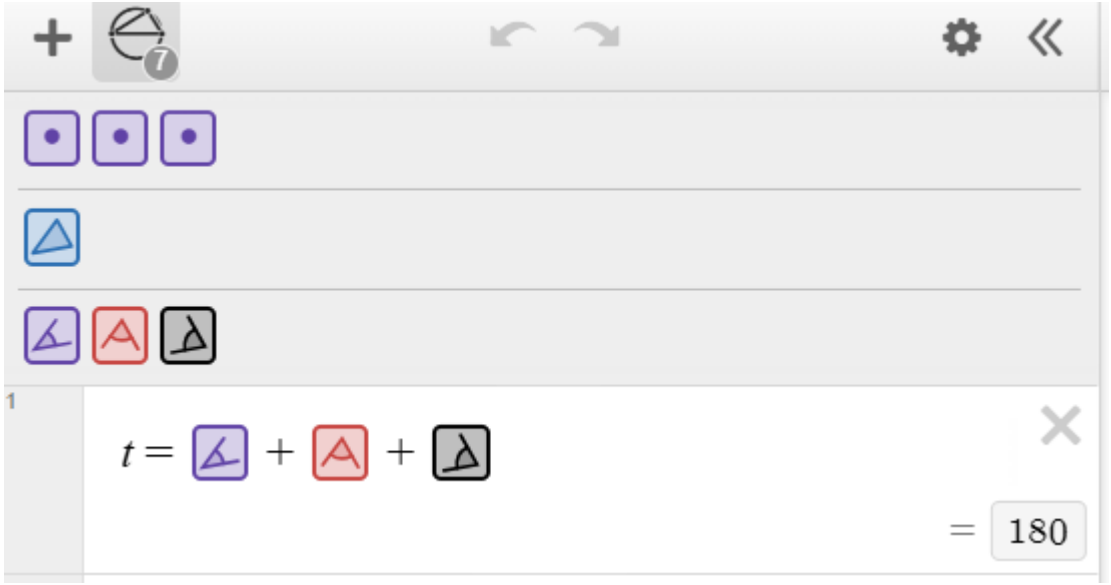
- Consider your questions as carefully as you think about your Desmos file!

Motivating question (1)

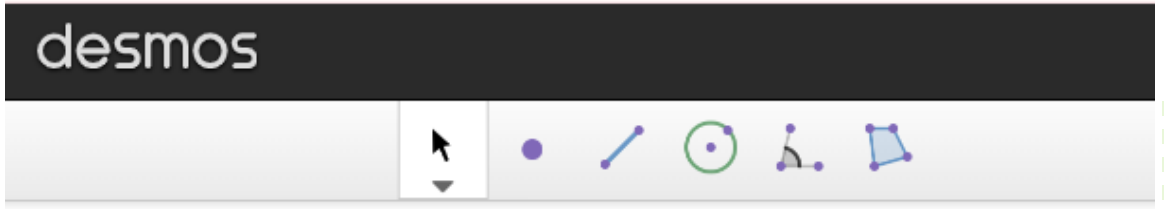
What do the angles inside a triangle add up to?

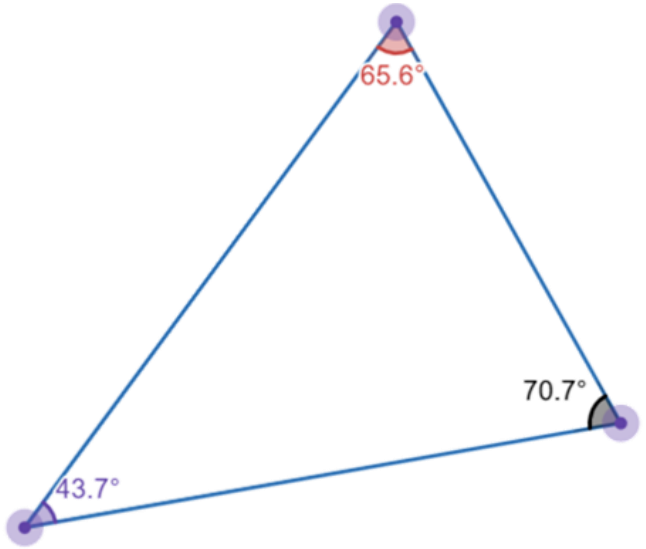
Layout

Tokens



Toolbar





Create your own polygons

- Work through page 1 of the handout to create your own file for finding the angle sum of a triangle.

- Repeat this process to create a similar construction for a quadrilateral.

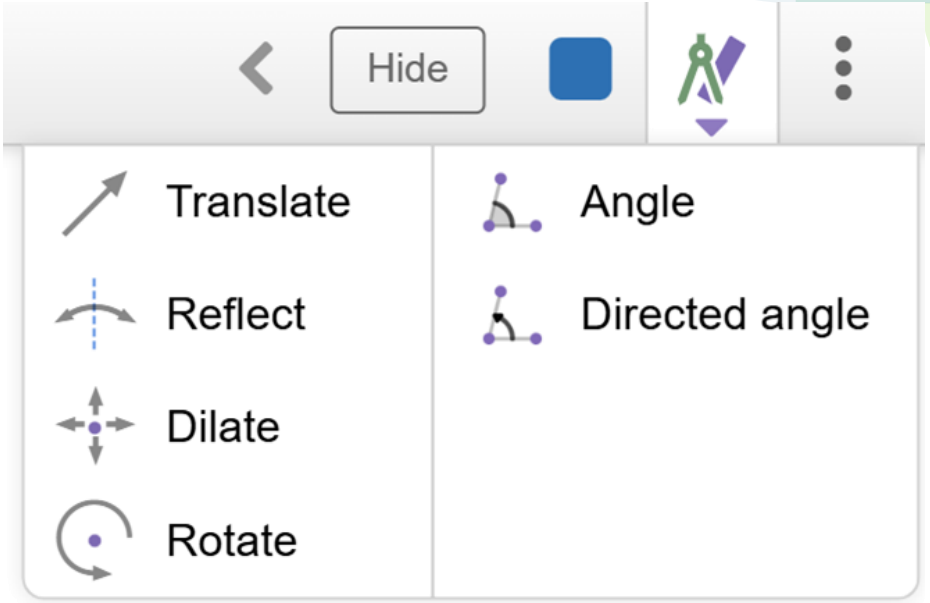
Design principles from Desmos

- Click to select – objects can be clicked to reference them. Hold down shift to allow selection of any object.
- Transformations as functions – drag down from the token menu to see the details
- Informal to formal

Transformations

Transformations

- This menu appears when you select an existing object



- Construct the ‘scaffold’ items first e.g.
  - for a reflection, you will need a mirror line
  - for a rotation, you need a centre

- Work through page 2 of the handout on reflecting a polygon

Transformations as functions

- When you drag a transformation token down you can see that it is defined as a function:

$$T_1(x) = \text{reflect}\left(x, \square\right)$$

$$T_2(x) = \text{translate}\left(x, \square, \square\right)$$

- This means you can create composite functions that apply multiple transformations:

$$T_3(x) = T_2\left(T_1(x)\right)$$

Motivating question (2)

- Can a rotation of 180 always be written as two reflections?
- Extension: Can a rotation of any size always be written as two reflections?

Sliders & lists

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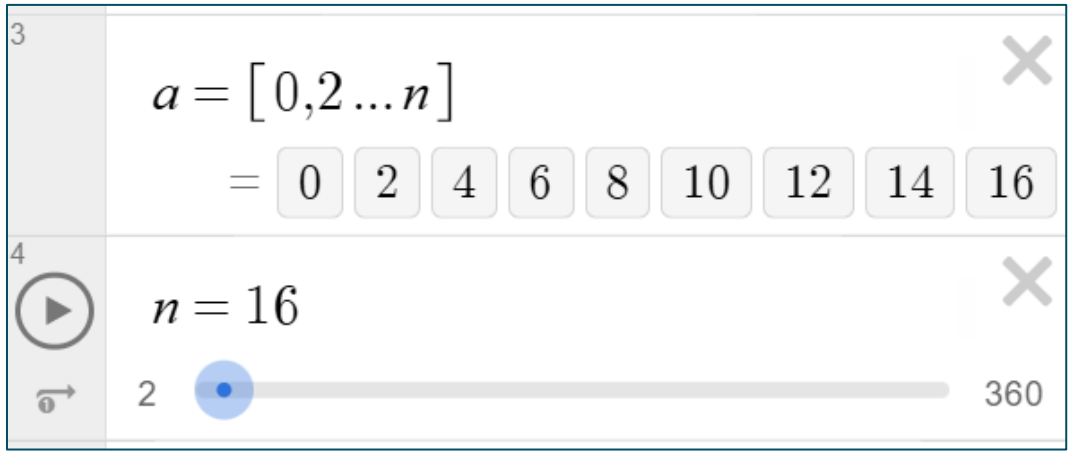
Sliders & lists

- You can use sliders to replace numerical values – this offers you the option to animate to create dynamic files
- Lists allow you to see several values at once
- These can be combined!



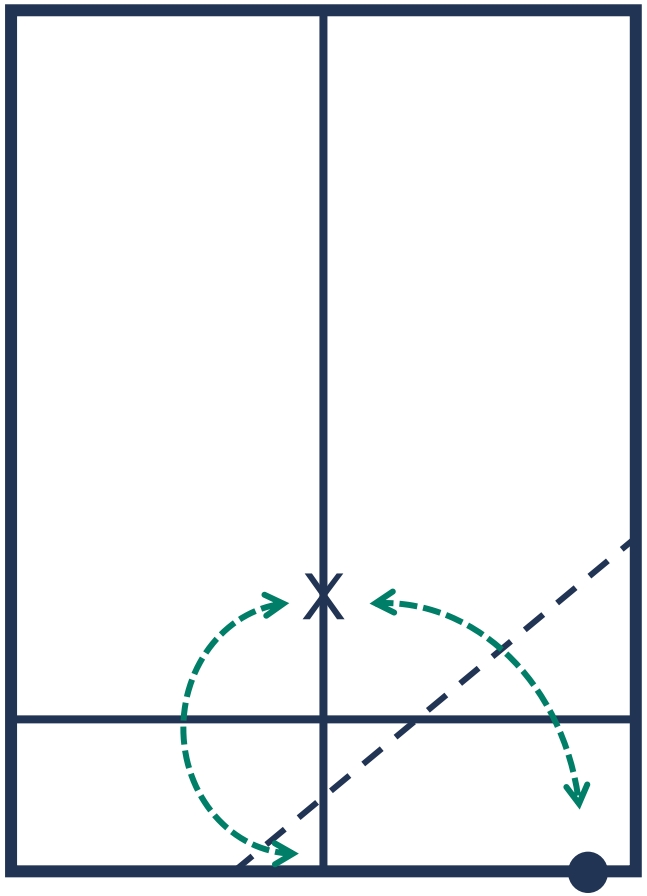
Work through page 3 of the handout on creating a trace

Paper folding activity

Start with an A4 sheet of paper:

1. Fold it in half long-ways (to create the *y*-axis
2. Mark a point on the fold a couple of inches from the bottom edge
3. Fold the bottom edge so that it goes through the point and is perpendicular to the vertical fold (to create the *x*-axis)
4. Make repeated folds so that the bottom edge goes through the point – at a variety of angles

What shape is created by the envelope of lines?



Reflections and support

Reflections

How can technology change the way your students think about geometry?

Further support

- AMSP Teaching with Desmos webinars
- Getting Started Desmos Geometry
- Introduction webinar from Desmos