Mathematical Habits of Mind Subgroup D Report

Negative Habits of Mind

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Brainstorming: Negative HoM

Spontaneous or impulsive disposition or tendency to act (We're only focused here on negative instances)

Example 1 $(x + 3)(x - 4) = 0$
      Student multiplies first

- **Targeting the familiar**
- **Programmed to react to certain recognized patterns**
- **Situated with respect to certain instructional environments**
- **Spontaneous disposition may be limiting to or block cognitive growth**

Research considerations

- **How can we identify spontaneous dispositions (vs automated correct responses)?**
- **What situations/tasks elicit a spontaneous disposition?**
- **Is a spontaneous disposition visually influenced? (What about blind people?)**
- **Can eye tracking collect useful information?**

Example 2

The figure shows a right triangle NQR and a rectangle PQRS: NQ = 5cm, QR = 12cm, and RS = 3cm. When you are asked to find the length PM, how likely are you going to begin by using the Pythagorean theorem to find the length NR?