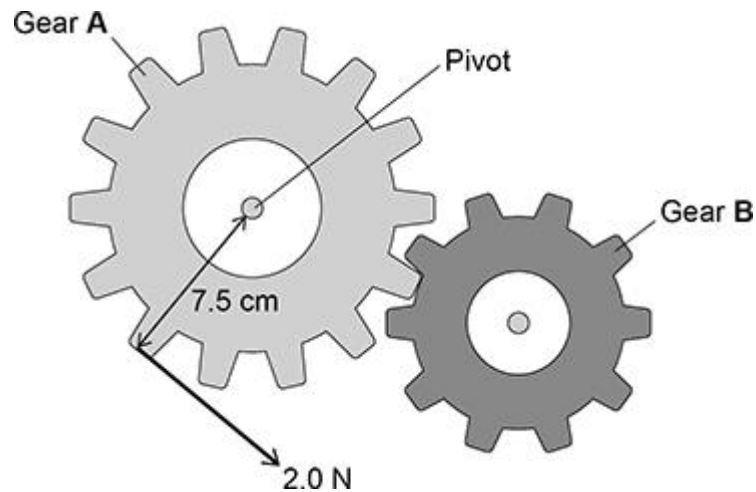


**Questions are for separate science students only****Q1.****Figure 2** shows two gears. **(Physics only)****Figure 2**

The child applies a force to gear **A**.

This causes a moment about the pivot, so gear **A** rotates.

Use the Physics Equations Sheet to answer parts (e) and (f).

- (a) Write down the equation which links distance ( $d$ ), force ( $F$ ) and moment of a force ( $M$ ).

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**(1)**

- (b) The child applies a force of 2.0 N on gear **A**.

The perpendicular distance between the force and the pivot is 7.5 cm.

Calculate the moment of the force about the pivot.

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Moment of force = \_\_\_\_\_ N m

(3)

- (c) Explain what happens to gear **B** when the child applies the force to gear **A**.

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(2)

(Total 6 marks)