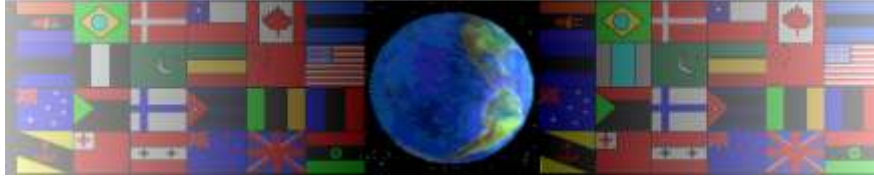


GEARS

V.Ryan © 2000 - 2009

On behalf of The World Association of Technology Teachers

W.A.T.T.



World Association of Technology Teachers

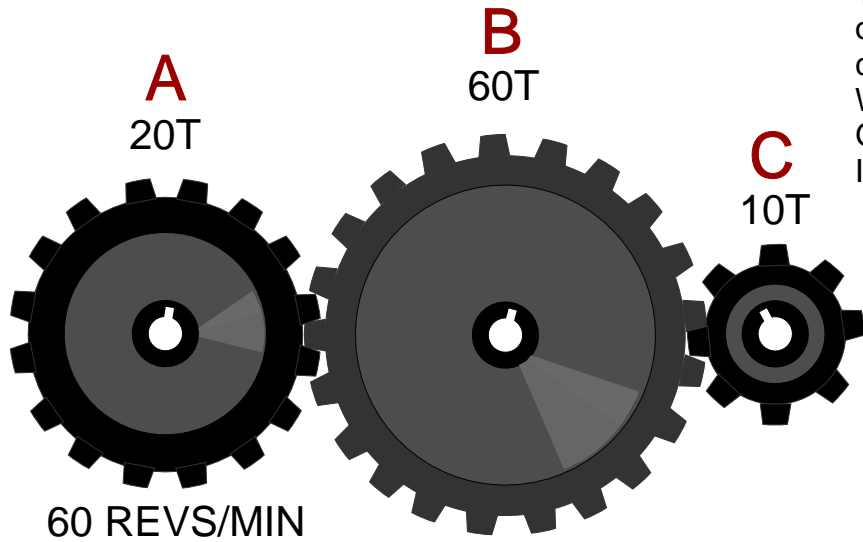
This 'Exercise' can be printed and used by teachers and students. It is recommended that you view (www.technologystudent.com) before attempting the worksheet .

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GEARS - EXAMINATION QUESTIONS

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When faced with three gears the question can be broken down into two parts. First work on Gears A and B. When this has been solved work on gears B and C.



The diagram above shows a gear train composed of three gears. Gear A revolves at 60 revs/min in a clockwise direction.

What is the output in revolutions per minute at Gear C?

In what direction does Gear C revolve ?

GEAR A	GEAR B	GEAR C
20 teeth	60 teeth	10 teeth
60 rpm		

First work out the speed at Gear B.

$$\frac{\text{teeth A}}{\text{teeth B}} \times \text{Revs/min A} = \text{Revs/min B}$$

$$\frac{20}{60} \times 60 = \underline{20} \text{ revs/min at 'B'}$$

(Remember B is larger than A therefore, B outputs less revs/min and is slower)

Next, take B and C. C is smaller, therefore, revs/minute will increase and rotation will be faster.

$$\frac{\text{teeth B}}{\text{teeth C}} \times \text{Revs/min B} = \text{Revs/min C}$$

$$\frac{60}{10} \times 20 = \underline{120} \text{ revs/min at 'C'}$$

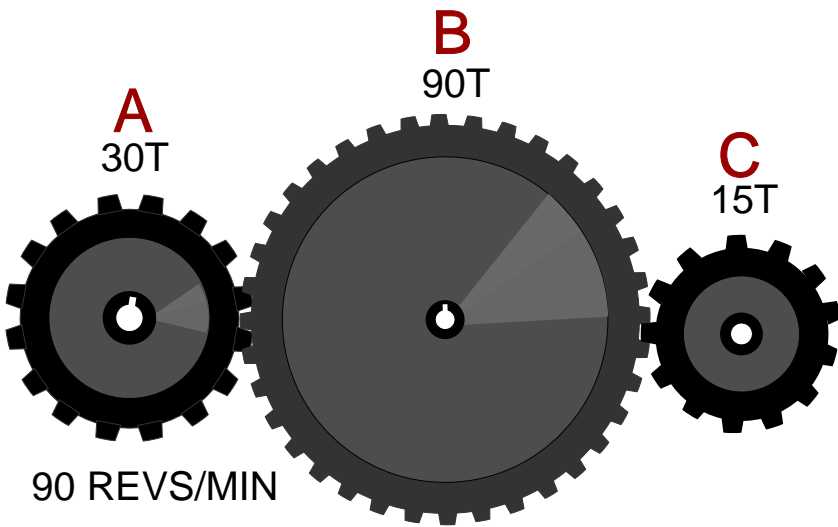
What direction does C revolve ?

A is clockwise, B consequently is anti-clockwise and C is therefore _____

GEARS - EXAMINATION QUESTIONS

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When faced with three gears the question can be broken down into two parts. First work on Gears A and B. When this has been solved work on gears B and C.



The diagram opposite shows a gear train composed of three gears. Gear A revolves at 90 revs/min in a clockwise direction.

What is the output in revolutions per minute at Gear C?

In what direction does Gear C revolve ?

GEAR A	GEAR B	GEAR C
30 teeth	90 teeth	15 teeth
90 rpm		

First work out the speed at Gear B.

$$\frac{\text{teeth } B}{\text{teeth } A} =$$

$$= \frac{90_{\text{rpm}}}{30} = \underline{\quad} \text{ revs/min at 'B'}$$

(Remember B is larger than A therefore, B outputs less revs/min and is slower)

Next, take B and C. C is smaller, therefore, revs/minute will increase and rotation will be faster.

$$\frac{\text{teeth } B}{\text{teeth } C} =$$

$$\underline{\quad} \text{ REVS X } \underline{\quad} = \underline{\quad} \text{ revs/min at 'C'}$$

What direction does C revolve ?

A is clockwise, B consequently is anti-clockwise and C is therefore _____