

GEAR RATIOS

A DRIVER

IS A GEAR THAT IS CONNECTED TO THE MOTOR OR THAT TURNS ANOTHER GEAR.

A DRIVEN

IS A GEAR THAT IS TURNED BY A DRIVER.



CAN A DRIVEN BE A DRIVER? WHY?

Yes, you can add another gear on to the gear train.

HOW DO YOU FIND THE TEETH RATIO?

Driver
Driven

* A ratio is a comparison between two numbers

IF MY DRIVERS HAS 15 TEETH AND MY DRIVEN HAS 45 TEETH WHAT IS MY EQUATION?

$$\frac{\text{Driver}}{\text{Driven}} = \frac{15}{45}$$

CAN IT BE REDUCED?

Yes ☺ by 15, so $\frac{15}{45}$ becomes $\frac{1}{3}$

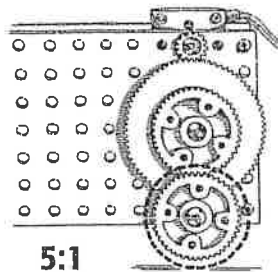
WHAT DO I NEED TO DO TO FIND MY GEAR RATIO?

Find the reciprocal (flip the teeth ratio)

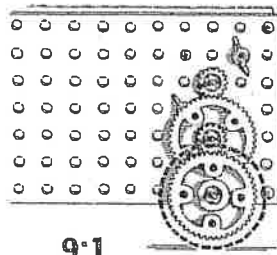
$$\text{Teeth Ratio} = \frac{1}{3} \quad \text{Gear Ratio} = \frac{3}{1}$$

Gear Ratio Examples

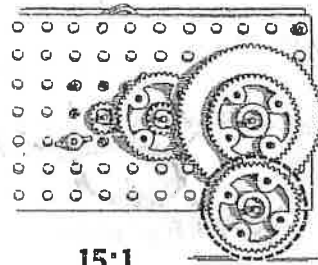
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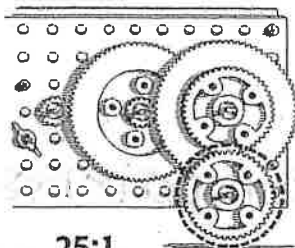
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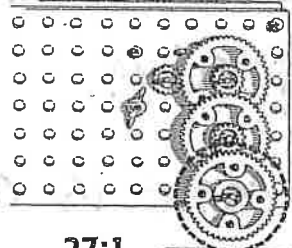
9:1



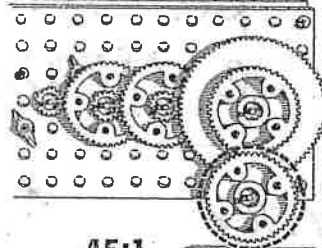
15:1



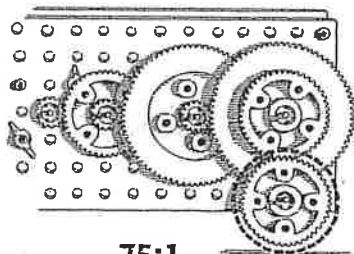
25:1



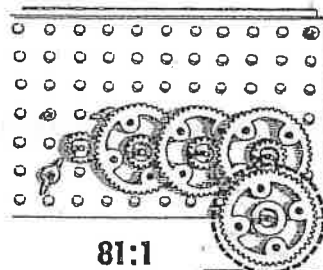
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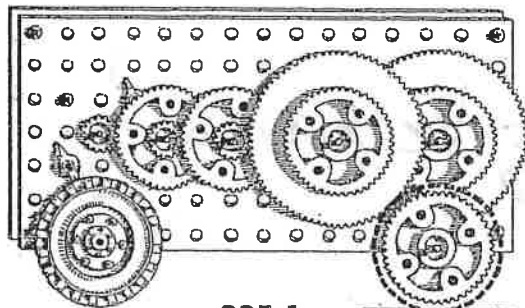
45:1



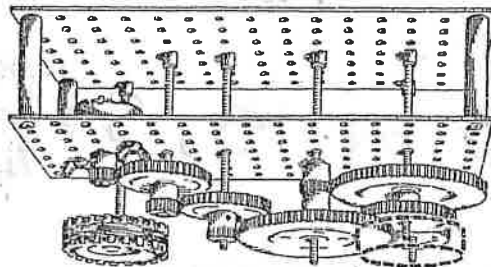
75:1



81:1



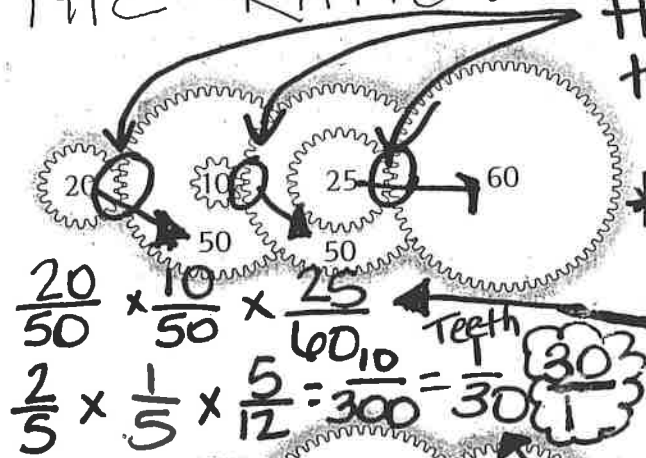
225:1



225:1 (top view)

FIND THE GEAR RATIO:

3.



* To find the teeth ratio there must be a tooth to tooth connection like this

* Then my arrows show the driver to driven pairs.

* Then I can put them into ratios Driver/Driven

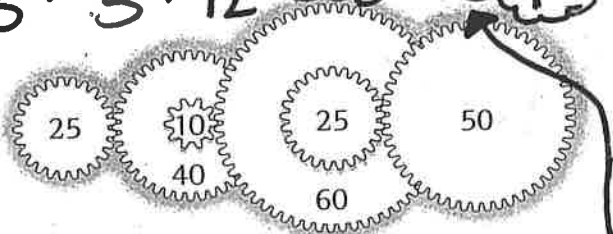
* Then you can reduce & multiply

* Reduce your final answer & you have your teeth ratio

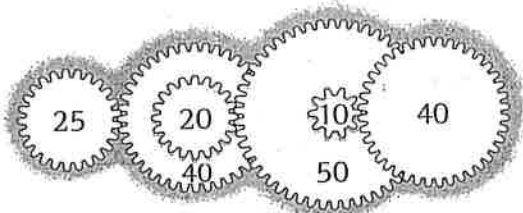
* Find the reciprocal or flip it to find your gear ratio

* Try the rest to see if you understand. 😊

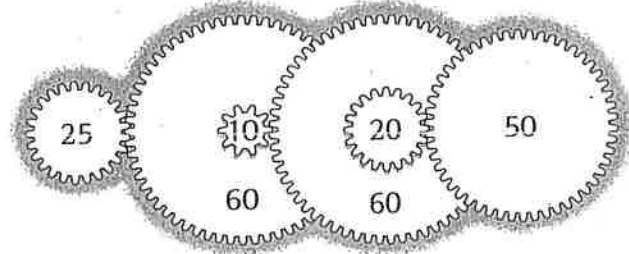
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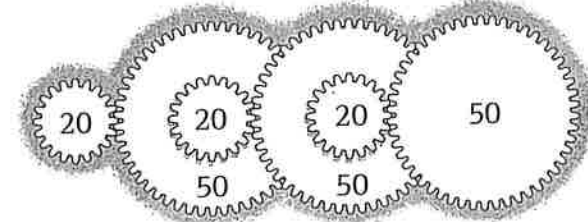
5.



6.



7.



Handwritten text in a cursive script, likely a letter or document. The text is written in dark ink on a light background. The handwriting is somewhat faded and difficult to decipher, but appears to be a continuous flow of text.

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GEAR RATIO RECORDING TABLE

Drawing of Gear Pair (driver, driven)	Teeth on Driver Gear	Teeth on Driven Gear	Teeth Ratio (driver: driven)	Rotations of Driver Gear	Rotations of Driven Gear	Gear Ratio (driver rotations: driven rotations)
	15	45				
	45	15				
	15	75				
	75	15				
	45	75				
	75	45				

GEAR RATIO PRACTICE SHEET

Drawing of Gear Pair (driver, driven)	Teeth on Driver Gear	Teeth on Driven Gear	Teeth Ratio (driver: driven)	Rotations of Driver Gear	Rotations of Driven Gear	Gear Ratio (driver rotations: driven rotations)
	15	60	1:4	4		4:1
	15	75		5	1	
	10			5	1	
	25					5:1
			10:1			
		80				4:1
	20			5	3	
		24	3:1			