

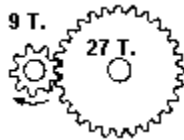
Student Name \_\_\_\_\_

KEY

Date \_\_\_\_\_

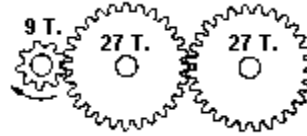
In each gearset, color the input red and the output member blue; leave the reaction member uncolored. In each case, the input will turn clockwise; draw an arrow to show the direction of rotation for the output member

1. Simple gear set:



The ratio for this gearset is **3:1**

2. Simple gear set with idler:



The ratio for this gearset is **3:1**

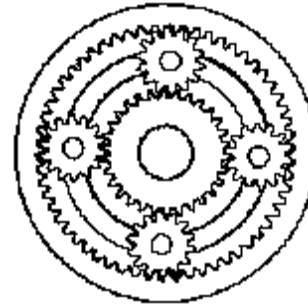
Directions: Use the formula given in Figure 5-4 to determine the gear ratio for each gearset in Problems 3 - 10. In each case, the ring gear has 58 teeth, and the sun gear has 30 teeth.

3. Simple planetary gearset: sun gear input, ring gear reaction, & carrier output:

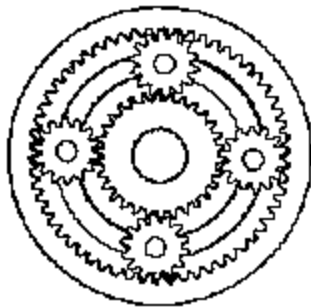
Ratio = **2.93:1**     $30 + 58 / 30 = 2.93$

What are the planet gears doing?

**Walking inside of the ring gear**



4. Simple planetary gearset: sun gear input, carrier reaction, & ring gear output:



Ratio = **1.93:1**     $58 / 30 = 1.93$

What are the planet gears doing?

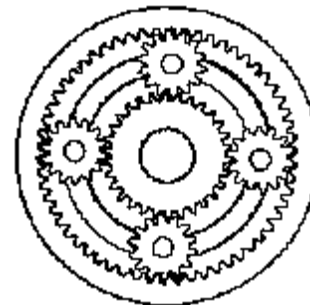
**Acting as idler gears between the ring and sun gears**

5. Simple planetary gearset: carrier input, ring gear reaction, & sun gear output:

Ratio = **0.34:1**     $30 / 30 + 58 = 0.34$

What are the planet gears doing?

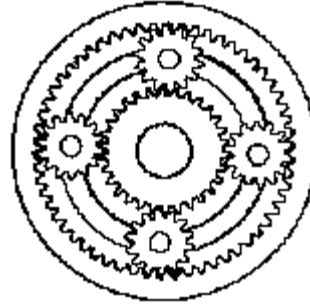
**Walking inside of the ring gear**



6. Simple planetary gearset: carrier input, sun gear reaction, & ring gear output

Ratio = **0.66:1**

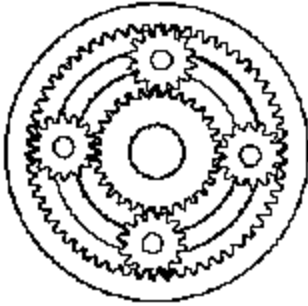
**$58 / 30 + 58 = 0.66$**



What are the planet gears doing?

**Walking around the sun gear**

7. Simple planetary gearset: ring gear input, carrier reaction, & sun gear output



Ratio = **0.52:1**

**$30 / 58 = 0.52$**

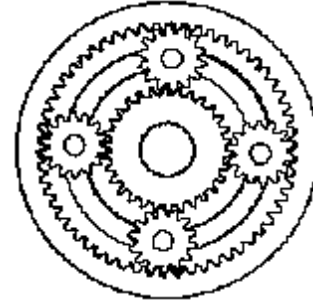
What are the planet gears doing?

**Acting as idler gears between the ring and sun gears**

8. Simple planetary gearset: ring gear input, sun gear reaction, & carrier output

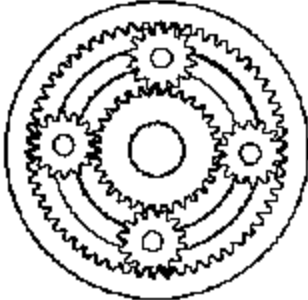
Ratio = **1.52:1**

**$30 + 58 / 58 = 1.52$**



What are the planet gears doing?

9. Simple planetary gearset: ring and sun gears input.



Ratio = **1:1**

What are the planetary gears doing?

**Locked between the ring and sun gears**

10. Simple planetary gearset: ring gear input, no reaction, & sun gear output.

Ratio = **0**

What are the planetary gears doing?

**Walking around the stationary sun gear**

