

# QUESTIONS

## The Engine

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First and Last Name

### Theory

Using the information in [www.gwellwood.com/subjects/mechanics/the-engine/](http://www.gwellwood.com/subjects/mechanics/the-engine/), the internet, and other sources to answer the questions below. I might make you think.

*There are NO Partial Marks - when it says "describe" – DESCRIBE  
This worksheet must be complete before you may work in the shop*

1. What is the difference between an Internal Combustion Engine and an External Combustion Engine (put some thought into this answer or I will hand this back to you to re-do).



2. What do I mean by "Cylinder Arrangement?"
3. What do I mean by "Displacement?"



9. Using your own words, describe what is happening to the following during the INTAKE stroke:

a. Piston

b. Intake Valve

c. Exhaust valve

d. Air

10. Using your own words, describe what is happening to the following during the COMPRESSION stroke:

a. Piston

b. Intake Valve

c. Exhaust valve

d. Air

11. Using your own words, describe what is happening to the following during the POWER stroke:

a. Piston

b. Intake Valve

c. Exhaust valve

d. Air

12. Using your own words, describe what is happening to the following during the EXHAUST stroke:

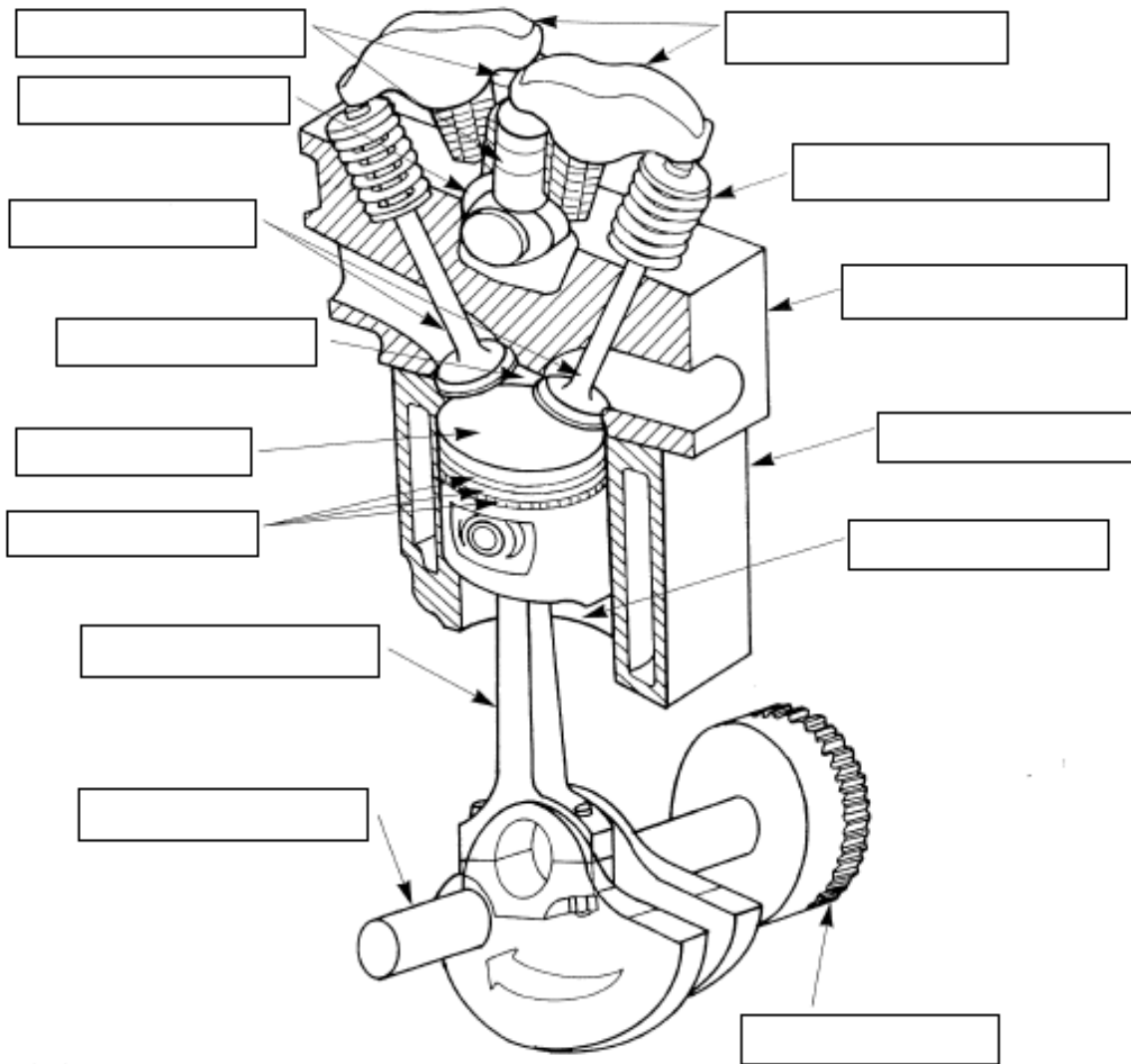
a. Piston

b. Intake Valve

c. Exhaust valve

d. Air

13. Identify the engine parts below



14. DESCRIBE the purpose of the following components:
- a. Cylinder Block
  
  - b. Cylinder Head
  
  - c. Crankshaft
  
  - d. Flywheel
  
  - e. Connecting Rod
  
  - f. Piston
  
  - g. Piston Rings
  
  - h. Valves
  
  - i. Camshaft
  
  - j. Lifters
  
  - k. Rocker Arms
  
  - l. Valve Springs

15. What are four things we can do to help the engine last as long as possible?

a.

b.

c.

d.

16. An Engine Vacuum Cranking test is done on an engine. The vacuum reading is uneven. What does this mean? You know this is on my website, right?

17. An Engine Vacuum Idling test is done on an engine. The vacuum reading is low but steady. What does this mean?

18. An Engine Vacuum Cruise test is done on an engine by letting the engine run at 2500rpm for 15 seconds. The vacuum reading drops. What does this mean?

19. When the throttle is let go during an Engine Vacuum Cruise test, the vacuum does not jump. What does this mean?

20. What sucks more: Ford or Chevy?

21. How do you perform a Compression Test on an engine?

a.

b.

c.

d.

e.

22. What are two causes for a low Compression Test reading?

a.

b.

23. When a cylinder records a low Compression Test reading, oil is put into the cylinder and the cylinder is re-tested.

a. What does the oil added to the cylinder do?

b. Let's say adding oil made the readings to go UP. What does this mean?



24. Identifying noises is one of the “black arts” of mechanics. Being able to describe the sound makes it much easier to tell what the problem is. How would describe the following sounds? You know samples of these are on my website, right?

a. Excessive valve lash

b. Piston Slap



c. Rod Knock

d. Wrist Pin Knock

25. Prior to removing an engine from a vehicle, it should be pressure washed. List five tips for pressure washing an engine:

a.

b.

c.

d.

e.

26. What are four tips for removing an engine?

a.

b.

c.

27. What is your favourite engine?

28. What is your favourite vehicle?