

1st Exam of English (Devoir n°1)
November 2015

First Year

Name :

Group:

Car Engines

Car engines have what are called "cylinders". These are cylinder shaped (not-surprisingly) chambers where fuel is actually burned. The chamber is closed on all sides except one, which has a piston, the burning fuel pushes the piston out and that makes the car go.

Now if you want more power, you can add more cylinders. The number in V6 or V8 is telling you how many cylinders there are. Generally, more cylinders is more power, but also lower fuel efficiency, because you're burning more fuel in more cylinders.

The V or I (inline) refers to how the cylinders are arranged. In inline, they are all just standing next to each other in a neat row. From one side it looks like the letter I. In V, they're arranged in the shape of a V, half the cylinders on each arm of the V. There are more configurations as well, less common though, X shape, H shape, flat, boxer, wenkel, circular etc.

The total volume of all the cylinders put together is the volume or capacity or displacement of the engine, measured in cc or liters. The relationship isn't very straightforward. It would seem like as long as the total volume is the same, you should get the same amount of power, regardless of number of cylinders. But in the real world, the power produced by the pistons needs to be transferred efficiently to the wheels - and this is affected by a very large number of factors.

Too few cylinders and you'll lose power in smoothing it, too many cylinders and you'll lose power to additional friction from additional moving parts. The sweet spot seems to be between 4-8 cylinders, which is where almost all production cars are. Even with the same cylinder and liter configuration, by tuning timing, changing how the carburetor works, adding a turbo, changing fuel characteristics etc, it is possible to produce widely varying power levels.

Section One: Reading Comprehension: (8pts)

A) Mark as true or false: (2pts)

- 1- The piston functions without energy. *False*
- 2- Cylinders are as important as fuel. *False*
- 3- Cylinders are arranged in various shapes. *True*
- 4- A small number of cylinders is good for a car engine. *False*

B) Read the text and answer the following questions: (04pts)

- a) Which energy makes the piston work? *the burning fuel*
- b) What is the role of cylinders? *Gives more power*
- c) What does the volume of the cylinder represent? *capacity or displacement of the engine*
- d) How can different power levels be produced with the same cylinder and liter configuration? *by tuning timing, changing how the carburetor works, adding a turbo, changing fuel*

characteristics

C) Synonyms: (1pts)

a- quantity = *amount* b- extra = *additional*

D) Opposites: (1pts)

a- Gain \neq *lose* b- apart \neq *together*

Section Two: Grammar (07pts)

Write the verbs in brackets in the correct form:

- 1-As a rule, *we put* the plants in four-inch holes in the ground.
- 2-We normally *water* the garden every other day.
- 3-Do we usually *pick* the tomatoes ?
- 4-The oceans *are* deep and cold.
- 5- Oceans *move* in circular currents.
- 6-The land *moves* on plates.
- 7-Earthquakes *often occur* .
- 8- Antartica *is covered* with ice.
- 9-*Does* the South Pole *have* strong winds ?
- 10-Wind *blows* across the land.
- 11-*Does* wind come from differences in air pressure ?
- 12-Rain *gives* water to life.
- 13- The researcher *doesn't travel* through Europe, he often goes to America.

Writing (05pts):

Think of an object or a device and describe it.

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