

Chapter 3-3 Flight Power

Name _____

1. The development of the _____ was the first successful harnessing of mechanical power for useful work.
2. The first practical steam engine was used to _____.
3. In 1712, Thomas Newcomen constructed a more efficient mine pump using a _____ with an inside sliding piston.
4. A _____ is a geometric shape, but when referring to an aircraft, it is the piston chamber of an engine.
5. In 1763, _____, a Scottish engineer, improved upon the Newcomen engine by creating a steam engine with two separate parts: a piston worked by steam and a condenser that turned the steam back into water.
6. _____ of France used a steam engine as the first aircraft engine.
7. The steam engine is an _____ combustion engine because the source of fire to create the steam is located _____ the engine.
8. The _____ engine provided power for the first heavier-than-air craft.
9. A _____ is a mechanical device that spins in reaction to a fluid flow that passes through or over it.
10. A _____ is an internal combustion engine in which expanding gases from the combustion chamber drive blades of a turbine.
11. Force is _____ or _____ exerted or brought to bear.
12. The force behind the movement of all things, also known as the capacity for doing work, is _____.
13. When _____ (stored) energy is released from its source and causes movement of an object, it becomes _____ (active) energy.

27. A _____ is an electrical generator with permanent magnets used to produce current for the ignition in an internal combustion engine.
28. As a safety factor, all aircraft engines have _____ magnetos.

MATCHING ENGINES

- | | |
|-------------------|--|
| 29. _____ In-line | a. cylinders are at 45 degree angles |
| 30. _____ Opposed | b. cylinders are arranged in a circle |
| 31. _____ V | c. an opposed 'V' engine |
| 32. _____ X | d. cylinders located in a row one behind the other |
| 33. _____ Radial | e. rows of cylinders directly opposite each other |

34. Name seven advantages of using gasoline and kerosene as aviation fuels.

- a.
- b.
- c.
- d.
- e.
- f.
- g.

35. _____ states that the volume of a gas varies exactly opposite with the pressure of a gas.

36. Charles' and Guy-Lussac's Law states the pressure and temperature of a confined gas are _____.

37. The jet engine's _____ is the force that makes the aircraft go.

38. The chief advantages of _____ aircraft are speed and the ability to fly efficiently at high altitudes.

39. Aircraft propelled by _____ have the advantage of economy at low speeds and at low altitudes.

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40. The simplest type of jet engine is the _____ because it has no moving parts.
41. In a turbojet engine, only about _____ of the air from the compressors is used for combustion. The remaining air is used for _____.
42. To help stop jet-powered aircraft when landing, many are equipped with _____ that redirect the flow of the engines exhaust.
43. _____ are based on the principle that high-frequency noise will not travel as far as, and will disperse more quickly than, noise of a lower frequency.
44. The main pollutants from jet engines are _____, _____, and _____.