Boeing 747 b747 400 technical training manual ata 75 76 77 powerplant phase 3

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What are the technical specifications of the 747 400? It typically accommodates 416 passengers in a three-class layout over a 7,285 nmi (13,492 km; 8,383 mi) range with its 875,000-pound (397 t) maximum takeoff weight (MTOW). The first -400M combi was rolled out in June 1989.

How heavy is a Boeing 747 in tons? The 747's maximum takeoff weight ranges from 735,000 pounds (333 t) for the -100 to 970,000 pounds (440 t) for the -8. Its range has increased from 5,300 nautical miles (9,800 km; 6,100 mi) on the -100 to 8,000 nautical miles (15,000 km; 9,200 mi) on the -8I.

What is the maximum altitude of a 747? It is the highest flying subsonic passenger airliner, with a service ceiling of 45,100 feet (13,700 meters). Boeing needed a smaller aircraft to compete with the McDonnell Douglas DC-10 and Lockheed L-1011 TriStar tri-jet wide-bodies, introduced in 1971/1972.

What is the fuel capacity of a 747? The 747-400F flight control system automatically manages all phases of the flight except take-off. There are four main fuel tanks in the wings, a tail plane tank, a center wing tank, and reserve fuel tanks in the outer wing sections. The maximum fuel capacity is 216,846 L (57,284 gal.).

What engines does the 747-400 use? Operators may choose between four Pratt & Whitney PW4062 turbofan engines, with 63,300lb maximum thrust, four Rolls-Royce RB211-524H turbofan engines, with 59,500lb maximum thrust or four General Electric CF6-80C2B5F turbofan engines, with 62,100lb maximum thrust.

What is the aircraft code for 747-400? B74D. The 747-400D (Domestic) is a high density seating model developed for short-haul domestic Japanese flights. This model is capable of seating a maximum of 568 passengers in a two-class configuration or 660 passengers in a single-class configuration. The B74D is member of the B747 family of aircraft.

How many engines can a 747 fly on? It is one of the most recognizable and iconic aircraft in the world, and has earned the nickname "Queen of the Skies". The Boeing 747 can fly on one engine only, but it is not recommended or desirable to do so. The Boeing 747 needs all its four engines to maintain a safe and efficient flight.

How many passengers can a Boeing 747-400 carry? The Boeing 747-400 airliner can carry between 416 and 660 passengers, depending on configuration. It is 231 feet, 10 inches (70.6 meters) long with a wingspan of 211 feet, 5 inches (64.4 meters) and overall height of 63 feet, 8 inches (19.4 meters).

How many B747 are still flying? As of June 2024, there were 434 Boeing 747 aircraft in active airline service, comprising 1 747-100, 2 747SPs, 19 747-200s, 2 747-300s, 258 747-400s, and 152 747-8s. These aircraft are listed by airline operators and variant in the following table.

Why did Boeing stop making the 747? Like the even bigger Airbus A380 (in the foreground), the 747 no longer meets the economic requirements of airlines that prefer long-haul, dual-engine aircraft such as the A350 or the Boeing 777 and 787. In the past year, there were only 20 or so outstanding orders for the 747, all of them for freight carriers.

Why is it called a 747? Boeing's aircraft naming convention dates back to the 1950s and its first jet-powered commercial aircraft, the 707. From then on, Boeing's jet-powered aircraft follow a naming pattern of 7X7, with few exceptions. This leads to the 727, 737, 747 and so on, right up to the 787.

Why is 747 called Queen of the Skys? Flying the 747—as well as flying on the 747—was an experience that no other aircraft offered, with a staircase to the upper deck. It was so culturally and economically significant, and had such a unique figure, that it had its own nickname: Queen of the Skies.

Where is fuel stored in a 747? rear spar of the wings. Each tank is of integral construction and has several bays formed by the wind structure, that is, wing ribs and/or mid spars. FUEL TANK VENTS (See Fig. 2) - Each fuel tank is vented individually to the surge tanks, one on each side of the air- plane.

How much fuel does a 747 use per hour? ASD's analysis shows that fuel consumption for the B-747 could range from 2,865 gallons per hour to 3,723 gallona per hour, depending on the mission.

Can a 747 land with full fuel? Larger planes like the Boeing 747, on the other hand, have fuel jettison systems. If the aircraft tries to land without dumping the fuel, it is considered an overweight landing attempt and could place immense stress on the airframe. It could also increase the risk of fire and fuel leaking onto the tarmac.

Why does the 747 need 4 engines? The Boeing 747-400 experiences the least degradation in performance, making it safer during an engine failure. Fitting an aircraft with four engines also increases power, enabling more passengers, heavier payloads, and increased performance.

How does a Boeing 747 engine work? The blades spin at high speed and compress or squeeze the air. The compressed air is then sprayed with fuel and an electric spark lights the mixture. The burning gases expand and blast out through the nozzle, at the back of the engine. As the jets of gas shoot backward, the engine and the aircraft are thrust forward.

What is the power of a 747 engine? The Boeing 747 has four engines, each of which can produce up to 59,934 horsepower. This means that the total horsepower of a Boeing 747 is 239,736 horsepower.

What engine is in the 747-400? The Boeing 747-400 is a development of the Boeing 747-300 with a slightly increased wing span and winglets, with more powerful engines and a two man crew cockpit. The engine options are: Pratt and Whitney PW4000, General Electric CF6-80C2B1F/B5F or Rolls-Royce RB211-524G2-19/G3-19/H2-19/G2-T-19/G3-T-19/H2-T-19.

How many pilots does a 747-400 have? 747 types 1~3 two pilots, one engineer. If flying over a specified time limit, an IRO pilot is required. 747–400 two pilots and

again if over a specific time limit an International Relief Officer is needed.

What is the maximum operating altitude of a 747-400? There are many variants, of the 747, but the general, consensus, is that the operating limitation for altitude is 45,000 feet. Somewhere higher, than 45000 feet the air would get too thin.

What is the spec of the Boeing 747? Boeing 747-8: Length: 70.66 meters. Cabin Width: 239.5 inches. Wing Span: 68.4 meters. Typical Seat Count (3-class): 467.

What are the characteristics of the Boeing 747?

What is the type rating of the 747-400? The B747-400 Initial Type Rating Course, comprises of 3 phases in total: Theoretical Knowledge Instruction of 80 hours in total. During this phase, you will be taught the Aircraft's System & Performance. At the end of the course, you will hvae to successfully pass a Final Exam.

What are the technical specifications of the Boeing 777 300?

What is electromagnet theory? Electromagnetic theory based on Maxwell's equations establishes the basic principle of electrical and electronic circuits over the entire frequency spectrum from dc to optics. It is the basis of Kirchhoff's current and voltage laws for low-frequency circuits and Snell's law of reflection in optics.

What is the electromagnetic brain theory? Introduction. Electromagnetic field (EMF) theories of mind/brain integration posit that current flow across neuronal membranes generates an electromagnetic field which, in turn, permits computation and integration of information, that produces a conscious mind (Pockett, 2014; McFadden, 2020).

What is electromagnetic mode theory? The mode theory is used to describe the properties of light that ray theory is unable to explain. The mode theory uses electromagnetic wave behavior to describe the propagation of light along a fiber. A set of guided electromagnetic waves is called the modes of the fiber.

What is the electromagnetic wave theory? The main points of electromagnetic wave theory were : When an electrically charged particle moves under acceleration, alternating electrical and magnetic fields are produced and transmitted. These fields are transmitted in the form of waves. These waves are called electromagnetic waves

or electromagnetic radiations.

What is the electromagnetic theory for beginners? 1 Electromagnetic Field Variables. The basic idea underlying electromagnetic theory is that space is permeated with electric and magnetic fields whose spatial and temporal variations are coupled to one another and are related to source densities (ie, distributions of charges and currents).

What are the four laws of electromagnetism? Electromagnetism: Faraday's law, Ampere's law, Lenz' law, & Lorentz force.

Are thoughts electric or magnetic? Thoughts are viewed as electromagnetic representations of neuronal information, and the experience of free will in our choice of actions is argued to be our subjective experience of the cemi field acting on our neurons. McFadden's view of free will is deterministic.

Can electromagnetic waves alter brain? Research shows that mobile waves have a negative effect on the human body. Putting the human brain near a source of electromagnetic waves can damage the normal activity of the brain and disrupt its normal function.

Does the human brain emit frequencies? Brain waves may have very different frequencies ranging from 0.1 to more than 100 Hz (Pirrotta, 2011). There are several classes of brain wave frequencies. Fast frequencies correspond to beta (13 to 25) and gamma (25 to 60 Hz) waves.

What is electromagnetic theory of life? Accordingly, an electromagnetic theory of life can be stated in one sentence with five elements: 1) the ultrastructures of life are clearly electro- magnetic; 2) the macromolecules are electrically conductive; 3) with loop closure of long-chain, series linked, high dipole monomers comes "enzyme"-type catalytic ...

What is the quantum electromagnetic theory? quantum electrodynamics (QED), quantum field theory of the interactions of charged particles with the electromagnetic field. It describes mathematically not only all interactions of light with matter but also those of charged particles with one another.

What is the basic law of electromagnetic theory? Faraday's First Law of Electromagnetic Induction Whenever a conductor is placed in a varying magnetic field, an electromotive force is induced. If the conductor circuit is closed, a current is induced, which is called induced current.

What is the Maxwell theory? In 1864, Maxwell discovered that electric and magnetic fields travel through space moving at the same speed of light as waves. Electromagnetic theory: He stated that light is a propagating wave of electric and magnetic field. The theory describes the interaction between the electric field and magnetic field.

Who invented electromagnetic theory? Faraday and Henry. Joseph Henry. The discovery of electromagnetic induction was made almost simultaneously, although independently, by Michael Faraday, who was first to make the discovery in 1831, and Joseph Henry in 1832.

What are the disadvantages of the electromagnetic wave theory? Limitations of Electromagnetic Wave Theory This theory couldn't explain the following: The phenomena of black body radiation. The photoelectric effect. The variation of heat capacity of solid as a function of temperature.

What is the trick to learn electromagnetic radiation? One trick I use to memorize the order is coming up with an acronym. A common one is "Real Monkeys Insist Very Useful X-mas Gifts" (Radio, Microwaves, Infrared, Visible, Ultraviolet, X-rays, Gammas) This is in the order of decreasing wavelength and increasing frequency.

Does electromagnetic therapy work? PEMF is an effective way of treating pain, reducing inflammation, and facilitating joint movement and stability improvement. It has proven to provide a stress-relieving impact that can help improve blood circulation and oxygen intake, reduce toxins in the body, and help heal cell regeneration.

What is the electromagnetic field in layman's terms? Electromagnetic fields are a combination of invisible electric and magnetic fields of force. They are generated by natural phenomena like the Earth's magnetic field but also by human activities, mainly through the use of electricity.

What is the three finger rule of electromagnetism? The right hand rule states that: to determine the direction of the magnetic force on a positive moving charge, point your right thumb in the direction of the velocity (v), your index finger in the direction of the magnetic field (B), and your middle finger will point in the direction of the the resulting magnetic force ...

What is the paradox of electromagnetism? The Faraday paradox or Faraday's paradox is any experiment in which Michael Faraday's law of electromagnetic induction appears to predict an incorrect result. The paradoxes fall into two classes: Faraday's law appears to predict that there will be zero electromotive force (EMF) but there is a non-zero EMF.

What is electromagnetism in layman's terms? The definition of electromagnetism is that a changing electric field induces a magnetic field, while a changing magnetic field induces an electric field. It is a concept in physics that deals with the behavior of static and moving electric charges and their interactions.

What is the electromagnetic wave theory for dummies? What is Maxwell's Electromagnetic Wave Theory? According to Maxwell's EM wave theory , light waves are related to changing electric fields and magnetic fields. The change within the electrical and magnetic field leads to the propagation of electromagnetic waves or light waves.

What is electromagnetic theory for kids? Electromagnetic waves are waves that can travel through the emptiness of space, at the speed of light. The seven types of electromagnetic waves are radio waves, microwaves, infrared waves, visible light waves, ultraviolet waves, x-rays and gamma rays.

What is the theory of electromagnetic force? The electromagnetic force is a type of physical interaction that occurs between electrically charged particles. It acts between charged particles and is the combination of all magnetic and electrical forces. The electromagnetic force can be attractive or repulsive.

What did Maxwell's electromagnetic theory explain? He stated that light is a propagating wave of electric and magnetic field. The theory describes the interaction between the electric field and magnetic field. Direction of both the fields is

perpendicular to each other. Maxwell also concluded that the wave travels at the speed of light.

What are the transformations in Euclidean geometry? Euclidean transformations preserve length and angle measure. Moreover, the shape of a geometric object will not change. That is, lines transform to lines, planes transform to planes, circles transform to circles, and ellipsoids transform to ellipsoids. Only the position and orientation of the object will change.

What is the rule of Euclidean geometry? In Euclidean geometry, for the given point and line, there is exactly a single line that passes through the given points in the same plane and it never intersects. Non-Euclidean is different from Euclidean geometry. The spherical geometry is an example of non-Euclidean geometry because lines are not straight here.

What are the 4 types of transformation? There are four main types of transformations: translation, rotation, reflection and dilation. These transformations fall into two categories: rigid transformations that do not change the shape or size of the preimage and non-rigid transformations that change the size but not the shape of the preimage.

What are the 5 theorems of Euclidean geometry? The basic postulates of Euclidean geometry are: 1) A straight line can be drawn between any two points, 2) A finite straight line can be extended continuously in a straight line, 3) A circle can be drawn with any centre and any radius, 4) All right angles are congruent, and 5) If two lines intersected by a transversal ...

Is Euclidean geometry complete? Tarski proved that his axiomatic formulation of elementary Euclidean geometry is consistent and complete in a certain sense: there is an algorithm that, for every proposition, can be shown either true or false.

What are the 3 most basic terms in Euclidean geometry? There are two types of Euclidean geometry: plane geometry, which is two-dimensional Euclidean geometry, and solid geometry, which is three-dimensional Euclidean geometry. The most basic terms of geometry are a point, a line, and a plane.

What are the 4 postulates of Euclidean geometry? To draw a straight line from any point to any point. To produce a finite straight line continuously in a straight line. To describe a circle with any center and distance. That all right angles are equal to one another.

What are the 6 transformations? Drawing on earlier work by The World in 2050 initiative, we introduce six SDG Transformations as modular building-blocks of SDG achievement: (1) education, gender and inequality; (2) health, well-being and demography; (3) energy decarbonization and sustainable industry; (4) sustainable food, land, water and oceans; (5) ...

What are the rules of transformation in geometry? There are different formulas for different rules of transformation. For vertically transformation the function f(x) is transformed to f(x) + a or f(x) - a. For horizontal transformation the function f(x) is transformed to f(x + a) or f(x - a). Further for stretched or compressed transformation is it f(cx) or cf(x).

What are the 3 main types of transformations? Transformations are changes done in the shapes on a coordinate plane by rotation, reflection or translation.

What are the 12 theorems of geometry? The geometry theorems are: Isosceles Triangle Theorem, Angle Sum Triangle Theorem, Equilateral Triangle Theorem, Opposite Angle Theorem, Supplementary Angle Theorem, Complementary Angle Theorem, 3 Parallel Line Theorems, Exterior Angle Theorem, Exterior Angles of a Polygon and Interior Angles of a Polygon.

What are the basics of Euclidean geometry? There are two types of Euclidean geometry: plane geometry, which is two-dimensional Euclidean geometry, and solid geometry, which is three-dimensional Euclidean geometry. A polygon is a closed, 2-dimensional shape, with edges(sides) are straight lines. The word "polygon" is derived from Greek for "many angles".

What are the 5 laws of Euclidean geometry?

What is Euclid's full name? Euclid's actual full name is unknown, though his full Greek can can be anglicized as "Eukleides." He is sometimes referred to as "Euclid of Alexandria," mainly as a way of distinguishing him from an earlier Socratic

philosopher known as "Euclid of Megara." Euclid was likely born around the year 325 B.C.E., possibly in ...

What are the 7 axioms?

Is Pi Euclidean geometry? Yes. ? is a mathematical constant usually defined as the ratio of the circumference of a circle to its diameter in euclidean geometry. It can also be defined in other ways; for example, by using an infinite series: ?/4 = 1 - 1/3 + 1/5 - 1/7 + 1/9 - . . .

Is Euclidean geometry used today? Architects and engineers use Euclidean geometry principles to design buildings, bridges, and other structures. Concepts such as angles, lines, and shapes help ensure structural stability and aesthetic appeal.

What is the most advanced geometry? The most advanced part of plane Euclidean geometry is the theory of the conic sections (the ellipse, the parabola, and the hyperbola). Much as the Elements displaced all other introductions to geometry, the Conics of Apollonius of Perga (c.

How to teach Euclidean geometry? Euclidean Geometry is normally taught by starting with the statement of the theorem, then its proof (which includes the diagram, given and RTP – Required To Prove), then a few numerical examples and finally, some non-numerical examples.

Did Euclid invent geometry? Euclid (/?ju?kl?d/; Greek: ?????????; fl. 300 BC) was an ancient Greek mathematician active as a geometer and logician. Considered the "father of geometry", he is chiefly known for the Elements treatise, which established the foundations of geometry that largely dominated the field until the early 19th century.

Who is the father of geometry? Euclid was a Greek mathematician and is also known as the 'father of Geometry'.

Is a sphere Euclidean? The surface of a sphere is not a Euclidean space, but locally the laws of the Euclidean geometry are good approximations. In a small triangle on the face of the earth, the sum of the angles is very nearly 180°.

What are the transformations of the Euclidean plane? In geometry, a Euclidean plane isometry is an isometry of the Euclidean plane, or more informally, a way of transforming the plane that preserves geometrical properties such as length. There are four types: translations, rotations, reflections, and glide reflections (see below § Classification).

What are the transformations in geometric modeling? Geometric transformations refer to image data augmentation techniques that alter the geometrical structure of images by shifting pixels to new positions without changing their values, commonly used in computer vision tasks to simulate real-world appearance changes.

What are the different types of Euclidean geometry? There are two types of Euclidean geometry: plane geometry, which is two-dimensional Euclidean geometry, and solid geometry, which is three-dimensional Euclidean geometry. The most basic terms of geometry are a point, a line, and a plane. A point has no dimension (length or width), but it does have a location.

What is each transformation in geometry? Translation is when we slide a figure in any direction. Reflection is when we flip a figure over a line. Rotation is when we rotate a figure a certain degree around a point. Dilation is when we enlarge or reduce a figure.

What is Euclidean space geometry? Euclidean space, In geometry, a two- or three-dimensional space in which the axioms and postulates of Euclidean geometry apply; also, a space in any finite number of dimensions, in which points are designated by coordinates (one for each dimension) and the distance between two points is given by a distance formula.

What is the formula for the Euclidean plane? Euclidean distance in two dimensions is given by $D = (x_2 ? x_1) 2 + (y_2 ? y_1) 2$, where D is the distance, and (x_1 , y_1) and (x_2 , y_2) are the Cartesian coordinates of the two points.

What are geometric transformations of the plane? A transformation is a change, so when we transform a shape, we change it in some way. There are three kinds of transformations: reflections, rotations and translations.

What are the basic geometric transformations? 2) The basic geometric transformations are translation, rotation, scaling, reflection, and shear. Translation moves an object by shifting its coordinates. Rotation turns an object around a fixed point. Scaling enlarges or shrinks an object.

What are the steps in geometric transformation? There are three main types: translations (moving the shape), rotations (turning the shape), and reflections (flipping the shape like a mirror image). Rigid transformations keep the shape's size and angles the same. The image is the shape in its new position and direction.

What is a transformation geometrically? Definition: Geometric Transformations A transformation is when any point ? in a plane is transformed to an image point ? ? in the same plane. In our first example, we will consider how to determine what type of transformation has taken place when an object is mapped onto an image.

What are the 5 laws of Euclidean geometry?

How to teach Euclidean geometry? Euclidean Geometry is normally taught by starting with the statement of the theorem, then its proof (which includes the diagram, given and RTP – Required To Prove), then a few numerical examples and finally, some non-numerical examples.

Is Euclidean geometry complete? Tarski proved that his axiomatic formulation of elementary Euclidean geometry is consistent and complete in a certain sense: there is an algorithm that, for every proposition, can be shown either true or false.

What are 4 geometric transformations? Geometric transformations are ways of moving or changing a shape on a coordinate plane. Four common types are translations, rotations, reflections, and dilations.

What are the basics of transformations? Transformations, in general, are when we take a function and manipulate it in such a way as to shift, stretch, or flip the graph of the function. There are three basic ways a graph can be changed; it can be shifted, it can be stretched/compressed, and it can be flipped.

What are 3 rigid transformation in geometry? There are three main types of rigid transformations. These are rotations, reflections, and translations. Each of rotations,

reflections, and translations will preserve the distances between each pair of points of the object, and they will preserve the overall shape and size of the object.

reitz electromagnetic theory, *geometric transformations volume 1 euclidean*

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