

# Exam simulation

Quiz BPL Hot Air - Balloon Pilot License - Principles of Flight (Balloon)



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STUDENT NAME:

DATE AND TIME:

**01. What is the minimum flight visibility in airspace "C" for an aircraft operating under VFR at FL125?**

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- a) 5000 m
- b) 3000 m
- c) 8000 m
- d) 1500 m

**02. What is the minimum flight visibility in airspace "C" at and above FL 100 for an aircraft operating under VFR?**

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- a) 10 km
- b) 8 km
- c) 5 km
- d) 1.5 km

**03. What effect has the elevation above MSL of an airfield on the carrying force and maximum take-off mass of a balloon?**

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- a) The higher the elevation, the lower the carrying force.
- b) The lower the elevation, the lower the maximum take-off mass.
- c) The lower the elevation, the higher the maximum take-off mass.
- d) The higher the elevation, the greater the carrying force.

**04. What has to be considered before touchdown of a hot-air balloon during landing?**

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- a) Inform the followers.
- b) Note the time.
- c) Cut off gas feed to the ignition flames.
- d) Turn off the radio.

**05. Which wind system may be dangerous for balloon rides in the Alps?**

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- a) Bora
- b) Scirocco
- c) Mistra
- d) Foehn

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## 06. The vertical speed indicator measures the difference of pressure between...

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- a) The present dynamic pressure and the static pressure of a previous moment.
- b) The present total pressure and the total pressure of a previous moment.
- c) The present dynamic pressure and the dynamic pressure of a previous moment.
- d) The present static pressure and the static pressure of a previous moment.

## 07. Which of the following symptoms may indicate hypoxia?

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- a) Blue marks all over the body
- b) Blue discolouration of lips and fingernails
- c) Muscle cramps in the upper body area
- d) Joint pain in knees and feet

## 08. The force resulting from the (positive) difference from load-bearing capacity and weight force, is referred to as:

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- a) Upper force
- b) Lift force
- c) Load force
- d) Climb force

## 09. The main burner is fed by which phase?

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- a) By the low-pressure phase
- b) By the gas phase
- c) By the plasma phase
- d) By the liquid phase

## 10. 5500 m equal...

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- a) 7500 ft.
- b) 18000 ft.
- c) 10000 ft.
- d) 30000 ft

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## 11. What is the meaning of the abbreviation "SERA"?

- a) Selective Radar Altimeter
- b) Standard European Routes of the Air
- c) Specialized Radar Approach
- d) Standardized European Rules of the Air

## 12. At which conditions does the arm blower have the highest efficiency?

- a) With as small distance to the balloon opening as possible.
- b) By evenly swiveling for better air spreading.
- c) By completely filling the balloon opening with the air beam.
- d) By placing the blower inside the hull.

## 13. (For this question, please use annex PFP-061) According ICAO, what symbol indicates a group of unlighted obstacles? Siehe Anlage 5



PFP-061

- a) C
- b) D
- c) B
- d) A

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## 14. Which parts of a hot-air balloon provide protection for the basket during landing?

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- a) Wheels
- b) Rubber pads
- c) Wearing strips
- d) Steel runners

## 15. Wake turbulence is caused by...

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- a) Wind shear at the wingtip of an aerofoil.
- b) Pressure compensation at the wingtip of an aerofoil.
- c) Jet blast behind a turbine engine
- d) Turbulence at the downwind side of a mountain range.

## 16. What effect has an increase in air temperature inside the hull of a hot air balloon by a given difference in temperature?

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- a) The increase in load carrying capacity increases with height.
- b) The increase in load carrying capacity decreases with height.
- c) The increase in rate of climb increases with height.
- d) The reduction in sink rate increases with height.

## 17. According ISA, what is the density of air at MSL?

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- a) 1.225 g/m<sup>3</sup>
- b) 1225 kg/m<sup>3</sup>
- c) 12.25 kg/m<sup>3</sup>
- d) 1.225 kg/m<sup>3</sup>

## 18. Which characteristic is important when choosing sunglasses used by pilots?

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- a) Curved sidepiece
- b) Unbreakable
- c) No UV filter
- d) Non-polarised

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**19. The dry adiabatic lapse rate has a value of...**

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- a) 1,0° C / 100 m.
- b) 0,6° C / 100 m.
- c) 0,65° C / 100 m.
- d) 2° / 1000 ft.

**20. The standard state of gases refers to which temperature?**

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- a) 0° C
- b) 15° C
- c) 25° C
- d) 5° C

**21. Which of the human senses is most influenced by hypoxia?**

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- a) The tactile perception (sense of touch)
- b) The olfactory perception (smell)
- c) The visual perception (vision)
- d) The auditory perception (hearing)

**22. What is the difference in time when the sun moves 10° of longitude?**

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- a) 0:04 h
- b) 0:40 h
- c) 0:30 h
- d) 1:00 h

**23. The parapet height of a hot-air balloon basket is at least:**

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- a) 100 cm, in commercial operation 110 cm
- b) 80 cm, in commercial operation 100 cm
- c) 120 cm, in commercial operation 130 cm
- d) 110 cm, in commercial operation 110 cm

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## 24. Why should liquid gas bottles for hot-air balloons be transported upright?

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- a) Because no other positions are approved.
- b) To prevent damage on the riser tube.
- c) To prevent exiting of residual gas.
- d) To keep the armature panel clean.

## 25. Which dangerous attitudes are often combined?

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- a) Impulsivity and careflessness
- b) Macho and invulnerability
- c) Self-abandonment and macho
- d) Invulnerability and self-abandonment

## 26. Above the friction layer, with a prevailing pressure gradient, the wind direction is...

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- a) At an angle of 30° to the isobars towards low pressure.
- b) Perpendicular to the isobars.
- c) Parallel to the isobars.
- d) Perpendicular to the isohypses.

## 27. While overflying a waypoint, it is stated that a distance of 3 NM has been taken 10 min. What will be the expected time of endurance for the complete distance of 18 NM?

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- a) 60 min.
- b) 90 min.
- c) 12 min.
- d) 180 min.

## 28. What cloud sequence can typically be observed during the passage of a warm front?

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- a) Squall line with showers of rain and thunderstorms (Cb), gusting wind followed by cumulus clouds with isolated showers of rain
- b) Wind becoming calm, dissipation of clouds and warming during summer; formation of extended high fog layers during winter
- c) Cirrus, thickening altostratus and altocumulus clouds, lowering cloud base with rain, nimbostratus
- d) In coastal areas during daytime wind from the coast and forming of cumulus clouds, dissipation of clouds during evening and night

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**29. A heading of 285 degrees is correctly transmitted as...**

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- a) Two hundred eighty-five.
- b) Two eight five.
- c) Two eight five hundred.
- d) Two hundred eight five.

**30. How do volume, density and temperature change when a gas is being compressed?**

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- a) Volume decreases, density decreases, temperature decreases.
- b) Volume decreases, density increases, temperature increases.
- c) Volume decreases, density increases, temperature increases
- d) Volume increases, density decreases, temperature decreases.

**31. The altimeter's reference scale is set to airfield pressure (QFE). What indication is shown during the flight?**

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- a) Pressure altitude
- b) Altitude above MSL
- c) Airfield elevation
- d) Height above airfield

**32. What is the great circle distance between two points A and B on the equator when the difference between the two associated meridians is exactly one degree of longitude?**

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- a) 60 NM
- b) 216 NM
- c) 400 NM
- d) 120 NM

**33. What information is provided in the part "AD" of the AIP?**

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- a) Access restrictions for airfields, passenger controls, requirements for pilots, license samples and validity periods
- b) Table of content, classification of airfields with corresponding maps, approach charts, taxi charts
- c) Warnings for aviation, ATS airspaces and routes, restricted and dangerous airspaces.
- d) Map icons, list of radio nav aids, time for sunrise and sunset, airport fees, air traffic control fees

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**34. The dynamic lift created by airflow across the top of the envelope of a balloon on the ground is referred to as?**

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- a) Lower lift
- b) Upper lift
- c) False lift
- d) Anti-ballast

**35. What wind conditions should be expected in the vicinity of showers or thunderstorms?**

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- a) Steady wind from direction of shower.
- b) Steady wind into direction of shower.
- c) Strong gust from variable directions
- d) Calm winds during passage of a shower.

**36. Regularity messages are messages...**

---

- a) Concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance.
- b) Concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight
- c) Sent by an aircraft operating agency or an aircraft of immediate concern to an aircraft in flight
- d) Concerning the operation or maintenance of facilities essential for the safety or regularity of aircraft operation.

**37. What phrase is used by a pilot to inform the tower about a go-around?**

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- a) Approach canceled
- b) Going around
- c) No landing
- d) Pulling up

**38. What is the correct way of acknowledging the instruction "Next report PAH"?**

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- a) Wilco
- b) Positive
- c) Roger
- d) Report PAH



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**39. Assume two arbitrary points A and B on the same parallel of latitude, but not on the equator. Point A is located on 010°E and point B on 020°E. The rumb line distance between A and B is always...**

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- a) More than 300 NM.
- b) Less than 300 NM.
- c) Less than 600 NM.
- d) More than 600 NM

**40. What is the minimum flight visibility in airspace "E" for an aircraft operating under VFR at FL75?**

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- a) 1500 m
- b) 8000 m
- c) 3000 m
- d) 5000 m

**41. The measurement of altitude is based on the change of the...**

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- a) Static pressure
- b) Dynamic pressure.
- c) Differential pressure.
- d) Total pressure.

**42. Changing the shape of the envelope of a free balloon, e.g. by a gust, results in:**

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- a) Increase in lift.
- b) Decrease in volume
- c) Increase of displaced air.
- d) Decrease in weight.

**43. The burning gas is pushed from the liquid gas phase through the riser tube to which component?**

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- a) To the evaporator
- b) To the pressure relief device
- c) To the fill level indicator
- d) To the controller

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**44. An aircraft travels 100 km in 56 minutes. The ground speed (GS) equals...**

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- a) 93 kt.
- b) 198 kt.
- c) 107 km/h.
- d) 58 km/h.

**45. What is the mass of a "cube of air" with the edges 1 m long, at MSL according ISA?**

---

- a) 0,1225 kg
- b) 12,25 kg
- c) 0,01225 kg
- d) 1,225 kg

**46. What may be the consequence, if gas containers of a hot-air balloon are refilled at temperatures below 0 °C by volume (80%)?**

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- a) Too low pressure at high temperatures.
- b) Less burner power at high temperatures
- c) Smaller volume in the container at high temperatures.
- d) Overfilling of the gas container.

**47. At high altitude, the complete heating system of a hot-air balloon fails. What maximum rate of descent has to be expected upon reaching ground?**

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- a) Approximatley 2.5 m/s
- b) Approximatley 4.5 m/s
- c) Approximatley 6.5 m/s
- d) Approximatley 2.5 m/s

**48. Under what conditions may class D airspace be entered with a radio failure?**

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- a) It is the destination aerodrome
- b) Approval has been granted before
- c) It ist the aerodrome of departure
- d) There are other aircraft in the aerodrome circuit

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**49. The carrying ropes of a hot-air balloon are made up from:**

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- a) Manila rope
- b) Stainless steel
- c) Copper
- d) Duralum

**50. Point A on the Earth's surface lies exactly on the parallel of latitude of 47°50'27"N. Which point is exactly 240 NM north of A?**

---

- a) 53°50'27"N
- b) 49°50'27"N
- c) 43°50'27"N
- d) 51°50'27"N

**51. What kind of reduction in visibility is not very sensitive to changes in temperature?**

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- a) Haze (HZ)
- b) Radiation fog (FG)
- c) Mist (BR)
- d) Patches of fog (BCFG)

**52. What is the meaning of an area marked as "TMZ"?**

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- a) Touring Motorglider Zone
- b) Traffic Management Zone
- c) Transponder Mandatory Zone
- d) Transportation Management Zone

**53. The aerostatic lift corresponds to which force?**

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- a) The weight of the balloon less ballast
- b) The dynamic force due to airstream across the top of the hull
- c) The weight of the displaced air
- d) The drag due to airstream around the balloon envelope

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**54. A balloon pilot decides to use one or more separate gas containers for initial heating during buildup. To ensure a safe buildup ...**

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- a) To expedite take-off, the gas containers have to be stored outside.
- b) The gas containers have to be fixed safely inside the basket.
- c) No separate gas containers are allowed during buildup.
- d) Two gas containers (one inside, one outside) are to be used.

**55. What does a readability of 5 indicate?**

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- a) The transmission is perfectly readable
- b) The transmission is readable but with difficulty
- c) The transmission is unreadable
- d) The transmission is readable now and then

**56. A transponder with the ability to send the current pressure level is a...**

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- a) Mode C or S transponder.
- b) Mode A transponder.
- c) Transponder approved for airspace "B".
- d) Pressure-decoder.

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57. Given the following masses: Empty mass 260 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Assuming temperature ISA+10, how many persons may be carried in the basket at maximum, if the balloon with 4 gas containers has to climb up to pressure altitude 12.000 ft ? (use attachment ECQB-PPL\_BPL001) Siehe Anlage 1

## Auszug aus dem Flughandbuch



- a) 3
- b) 5
- c) 4
- d) 2

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**58. How can you obtain meteorological information concerning airports during a crosscountry flight?**

---

- a) AIRMET
- b) VOLMET
- c) METAR
- d) GAMET

**59. What is meant by the term "terrestrial navigation"?**

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- a) Orientation by instrument readings during visual flight
- b) Orientation by ground features during visual flight
- c) Orientation by GPS during visual flight
- d) Orientation by ground celestial object during visual flight

**60. Which abbreviation is used for the term "visual flight rules"?**

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- a) VFS
- b) VRU
- c) VMC
- d) VFR

**61. Temperatures will be given by meteorological aviation services in Europe in which unit?**

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- a) Degrees Centigrade (° C)
- b) Degrees Fahrenheit
- c) Gpdam
- d) Kelvin

**62. What situation may result in the occurrence of severe wind shear?**

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- a) When a shower is visible close to the airfield
- b) Cross-country flying below Cu clouds with about 4 octas coverage
- c) During final approach, 30 min after a heavy shower has passed the airfield
- d) Flying ahead of a warm front with visible Ci clouds

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**63. The final sinkrate of a hot-air balloon is achieved after descent over a vertical distance of:**

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- a) 1000 - 2000 m
- b) 50 - 100 m
- c) 250 - 450 m
- d) 500 - 1000 m

**64. Which of the following qualities are influenced by stress? 1. Attention 2. Concentration 3. Responsiveness 4. Memory**

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- a) 2, 4
- b) 1
- c) 1, 2, 3, 4
- d) .1, 2, 3

**65. Urgency messages are messages...**

---

- a) Concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance.
- b) Concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight.
- c) Concerning the operation or maintenance of facilities essential for the safety or regularity of aircraft operation.
- d) Sent by a pilot or an aircraft operating agency which have an imminent meaning for aircraft in flight.

**66. Which of the following options are possible SSR-Transponder modes?**

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- a) B, R, S
- b) A, C, S
- c) A, C, R
- d) B, C, V

**67. A flight is called a "visual flight", if the...**

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- a) Flight is conducted in visual meteorological conditions.
- b) Visibility in flight is more than 8 km
- c) Flight is conducted under visual flight rules.
- d) Visibility in flight is more than 5 km.

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**68. With respect to aircraft accident and incident investigation, what are the three categories regarding aircraft occurrences?**

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- a) Incident Serious incident Accident
- b) Event Serious event Accident
- c) Happening Event Serious event
- d) Event Crash Disaster

**69. What factor may affect the top of cumulus clouds?**

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- a) The spread
- b) Relative humidity
- c) The absolute humidity
- d) The presence of an inversion layer

**70. QFE is the...**

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- a) Magnetic bearing to a station
- b) Barometric pressure at a reference datum, typically the runway threshold of an airfield.
- c) Barometric pressure adjusted to sea level, using the international standard atmosphere (ISA).
- d) Altitude above the reference pressure level 1013.25 hPa.



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## Response Scheme

Compare your answers with the following diagram and mark your score!

01: C	02: B	03: A	04: C
05: D	06: D	07: B	08: D
09: D	10: B	11: D	12: C
13: A	14: C	15: B	16: B
17: D	18: D	19: A	20: C
21: C	22: B	23: A	24: B
25: B	26: C	27: A	28: C
29: B	30: B	31: D	32: A
33: B	34: C	35: C	36: D
37: B	38: A	39: C	40: D
41: A	42: B	43: A	44: C
45: D	46: D	47: C	48: B
49: B	50: D	51: A	52: C
53: C	54: B	55: A	56: A
57: A	58: B	59: B	60: D
61: A	62: A	63: C	64: C
65: B	66: B	67: C	68: A
69: D	70: B		

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## Response form

Use this form to mark your answers

01: _____	02: _____	03: _____	04: _____
05: _____	06: _____	07: _____	08: _____
09: _____	10: _____	11: _____	12: _____
13: _____	14: _____	15: _____	16: _____
17: _____	18: _____	19: _____	20: _____
21: _____	22: _____	23: _____	24: _____
25: _____	26: _____	27: _____	28: _____
29: _____	30: _____	31: _____	32: _____
33: _____	34: _____	35: _____	36: _____
37: _____	38: _____	39: _____	40: _____
41: _____	42: _____	43: _____	44: _____
45: _____	46: _____	47: _____	48: _____
49: _____	50: _____	51: _____	52: _____
53: _____	54: _____	55: _____	56: _____
57: _____	58: _____	59: _____	60: _____
61: _____	62: _____	63: _____	64: _____
65: _____	66: _____	67: _____	68: _____
69: _____	70: _____		