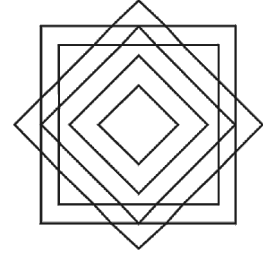


Pipefitter - Steamfitter

Goodluck!



1. The operating temperature is 140 degrees F. Waylon is using polyvinyl chloride pipe 4 inches in diameter.

The recommended support spacing is?

- (A) 5.2 inches (B) 6.3 feet
(C) 5.6 inches (D) 5.6 feet

2. Which of the following is true about a double disc gate valve?

- (A) It is positioned between the tapered seats to form a seal. (B) The disc and seat are parallel to each other and are not tapered.
(C) It consists of two pieces that sit between two matching tapered seats in the body. (D) It is hollow around the edges and solid across the centre portion.

3. When installing 25 feet of two tier fin vector baseboard with a rating of 6.7 EDR/foot, how much heat is available?

- (A) 40 200 Btu (B) 29 400 Btu
(C) 28 800 Btu (D) 47 250 Btu

4. A 7 foot diameter water tank is 12 feet high. The tank will hold how many gallons of water when full?

- (A) Less than 3,000 (B) Between 3,200 and 3,400
(C) More than 3,400 (D) Between 3,000 and 3,200

5. A 45 degree offset has a travel of 200 mm.

Calculate the run of the offset.

- (A) 14.4 mm (B) 283 mm
(C) 141 mm (D) 21.5 mm

6. A sump pump in a refinery has become very loud and it is clear that it will need to be removed and replaced. The pump is located at the bottom of the sump, which is 1 metre (39.4") deep. If the correct pump and materials are available, what special hazards must be accounted for, before replacing the pump?
- (A) A lockout and a confined space entry permit are required (B) A lock out is required.
- (C) No special hazard precautions are required. (D) A lock out, a confined space entry permit, and a hot permit are required.
7. What is the primary purpose of soldering flux?
- (A) Provide a good finish. (B) Prevent oxidation.
- (C) Remove impurities. (D) Promote capillary action.
8. At what pipe size does standard weight pipe maintain a constant wall thickness?
- (A) 300 mm (B) 200 mm
- (C) 250 mm (D) 350 mm
9. A common sealant that is applied to the pipe threads before a connection is known as what?
- (A) Pipe dope (B) Pipe bond
- (C) Pipe putty (D) Pipe glue
10. On a high pressure steam boiler with a safety valve set at 30psi, what is the recommended range for the pressure gauge?

Imperial Metric

- A. 0 to 30 psi A. 0 to 210 kPa
 B. 0 to 60 psi B. 0 to 420 kPa
 C. 30"Hg to 30 psi C. 760 mm Hg to 210 kPa
 D. 30"Hg to 60 psi D. 760 mm Hg to 420 kPa

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

11. What must be completed prior to a hydrostatic test on a registered system?
- (A) Ensure all pipe insulation and coverings are in place.
 - (B) Ensure all pressure relieving devices have been installed.
 - (C) Ensure all material is traceable and welder ID's are recorded.
 - (D) Ensure all shipping constraints have been removed from constant support hangers.
12. What level of current on the human body in milli-amps gives a painful shock and the person cannot let go?
- (A) 100-200
 - (B) 8-15
 - (C) 20-75
 - (D) 15-20
13. The type of solar collection system that uses a concentrated saline solution that solidifies at temperatures below 32 degrees Celsius is the:
- (A) direct gain system
 - (B) passive solar heating system.
 - (C) active solar energy system.
 - (D) heat of fusion system.
14. What letters are standard steel pipe identified as?
- (A) HX
 - (B) XH
 - (C) STAD
 - (D) STD
15. What is the major difference between a thermocouple and a thermopile?
- (A) The thermopile is physically a smaller device.
 - (B) The thermopile generates a smaller voltage.
 - (C) The thermopile generates a higher voltage.
 - (D) The thermopile can only be used residential appliance.
16. Why would aluminum and tin not be a good candidate for silver brazing?
- (A) They would not be good because the brazing would cause a color disfiguration
 - (B) They would not be good because they are too expensive.
 - (C) They would not be good because the silver brazing would not stick to those metals.
 - (D) They would not be good because they have a low melting point.

17. Flow measurement using the vena contracta method is limited to pipe sizes _____ inches and larger.

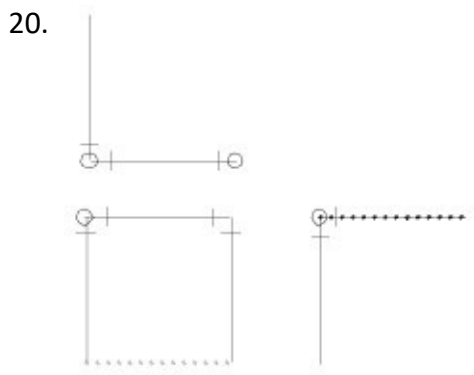
- (A) 2.5
- (B) 4
- (C) 1.5
- (D) 6

18. What is the Arc Flash hazard/risk category for removal of electrical bolted covers to exposed bare energized parts on equipment 240 Volt to 600 Volt?

- (A) 3
- (B) 2
- (C) 0
- (D) 1

19. A scaffold must be designed and constructed to support at least _____ times the load that may be imposed off of it.

- (A) 5
- (B) 3
- (C) 4
- (D) 2



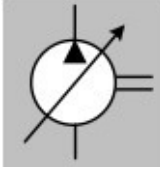
Which of the following represents the isometric drawing of the figure?

- (A)
- (B)
- (C)

21. Using the rule of thumb for wire rope, what is the safe working load for a 1" diameter MRC 6X19 wire rope?
- (A) 12,000 lb (B) 1500 lb
(C) 16,000 lb (D) 2000 lb
22. What is used to align a flexible coupling on a base mounted pump?
- (A) Combination square and level. (B) Straight edge and feeler gauge.
(C) Water level and straight edge. (D) Vernier calliper and micrometer.
23. What is the procedure for starting a locked out piece of equipment when the lock out key is not available?
- (A) The supervisor will phone engineering to remove the lock by whatever means and continue the start up procedure. (B) The supervisor will follow site and company lock out protocol, remove the lock by whatever means and continue the start up procedure.
(C) The supervisor will call the operating engineer to remove the lock and then continue the start up procedure. (D) The supervisor will phone his supervisor to remove the lock by whatever means and continue the start up procedure.
24. What is the recommended safety factor for thermo-matic traps?
- (A) 2 to 3 (B) 1.2 to 2
(C) 2 to 4 (D) 1.5 to 2.5
25. What affects the speed of a pneumatic grinder?
- (A) Air pressure (B) Air flow.
(C) Torque rating. (D) Air quality.
26. What would be required if a sleeve-type expansion joint is received fully compressed?
- (A) Install the expansion joint as is, and wait until the line is at its maximum operating temperature before installing the anchors. (B) Install the expansion joint, after pulling the joint open mechanically to the amount required.
(C) Install a piping offset in place of the expansion joint. (D) Install the expansion joint in a location that is easily accessed for service.

27. What does the designation "L" represent in 316L stainless steel pipe?
- (A) Low carbon content (B) Low iron content
(C) Low chrome content (D) Low chrome content
28. What would happen to a soot blower inserted into the combustion gas stream of a high pressure boiler when no steam is flowing into the soot blower?
- (A) The fuel nozzle will melt. (B) The view window will distort.
(C) The wand will bend. (D) The nozzle will plug.
29. When water changes state from a liquid to a steam it expands by _____ times.
- (A) 6 (B) 100
(C) 2 (D) 1700
30. On a 1" X 1" X 2" black malleable tee, what does the 2" refer to?
- (A) Concentric tee configuration (B) Branch opening.
(C) Eccentric tee configuration. (D) Larger run opening.
31. Prior to commissioning a lube oil system, what procedure must be done?
- (A) The test medium must be removed and the system filled with oil. (B) The system must be pneumatically tested to its yield point.
(C) A combination of oil and water must be circulated through the system (D) The system must be tested, flushed and pickled.
32. A fitting, either cast or wrought, having one side outlet at any angle other than 90 degrees is a/an?
- (A) Branch tee (B) Wye
(C) Manifold (D) Rolling offset

33.



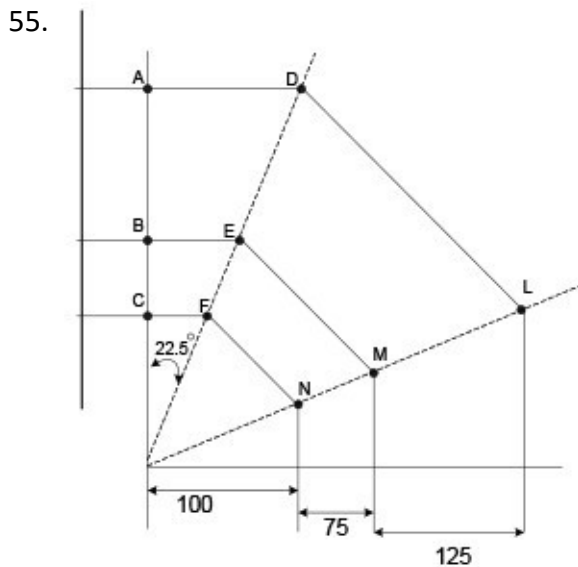
What does the above symbol indicate?

- (A) An unidirectional flow, variable capacity hydraulic pump.
- (B) An unidirectional flow, fixed capacity hydraulic pump.
- (C) A bi-directional, fixed capacity hydraulic pump.
- (D) A bi-directional flow, variable capacity hydraulic pump.
34. Which of the following is true with respect to Nickel 200?
- (A) It is a general purpose material for applications that require resistance to heat and corrosion
- (B) It has a high resistance to hydrochloric and sulfuric acid under reducing conditions.
- (C) It has excellent resistance to most acids including strong oxidizers such as ferric and cupric chlorides.
- (D) It one of the few metals that can be used with hot string solutions of magnesium chloride.
- (E) It has high resistance to caustics and high temperature halogens.
35. A steam system could have a large amount of heat loss per foot of pipe. In an effort to reduce this you would:
- (A) insulate the piping.
- (B) install the piping at a greater incline
- (C) preheat the piping
- (D) increase the temperature of the steam.
36. When purging a stainless steel line for welding, where should Argon gas be introduced?
- (A) At the low point
- (B) Inside the pipe at the joint.
- (C) At the high point.
- (D) Outside the pipe at the joint

37. If the piping system you install deviates from the engineered drawings, what procedure should be followed?
- (A) Write down all the changes and store them in a safe place for future reference.
 - (B) Make a mental note of all the changes and be prepared to present them at the weekly sight meeting.
 - (C) Document all as-built alterations and submit them to the engineer
 - (D) Write down all the changes and send it to your company supervisor.
38. What is the minimum size copper piping, in inches, permitted for use with medical gas?
- (A) 1/4
 - (B) 1/2
 - (C) 1
 - (D) 3/4
39. It is common practice to install insulating unions when connecting hot water tanks to metallic piping to:
- (A) protect the tank from electrolytic corrosion.
 - (B) reduce water hammer.
 - (C) keep the water hot.
 - (D) avoid thermal shock.
40. When testing piping and a hydrostatic test is not practical, can a pneumatic test be performed?
- (A) Approval of the Safety Codes Officer and acceptance from the owner.
 - (B) Approval of the Safety Codes Officer and site superintendent.
 - (C) Because of the hazards involved a pneumatic test will not be permitted.
 - (D) Approval of the Safety Codes Officer is required.
41. How and shackles and pins stored when a job is complete
- (A) Replace worn pins with bolts and store together in a clean dry environment
 - (B) Replace worn pins with bolts and keep in an accessible rigging box
 - (C) Remove pins from shackles and keep in an accessible rigging box
 - (D) Place pins in shackles and store in a clean dry environment

42. Steam piping for a Cast Iron Sectional steam boiler has been replaced with new A105 pipe. Before the boiler will run properly, which of the following procedures will be required?
- (A) An operational boiler start-up is required
- (B) A flue gas analysis is required.
- (C) Apply 150 psig test on boiler and system.vvv
- (D) A clean and flush is required.
43. Which of the following plastic pipe types is designed for hot or cold water distribution systems?
- (A) PEX
- (B) PE
- (C) AL
- (D) ABS
44. A pipe is being suspended from a concrete structure using 1/2-in. wedge type female inserts (expansion shield) for supports. What is the procedure for installing the inserts after drilling the correct size hole
- (A) Place the insert and tighten the locking nut
- (B) Place the insert and set the wedge
- (C) Apply epoxy and install the anchor
- (D) Insert the anchor and remove the locking nut
45. In comparing 1:20 to 1:200 drawing ratio on a scale rule, which statement is correct?
- (A) The 1:20 drawing scale will cover the same as the 1:200 drawing scale.
- (B) The 1:200 drawing scale will cover 10 times more area than the 1:20 drawing scale
- (C) The 1:200 drawing scale will cover 20 times more area than the 1:20 drawing scale.
- (D) The 1:20 drawing scale will cover 10 times more area than the 1:200 drawing scale
46. Which reducer produces a center discharge?
- (A) Eccentric
- (B) Butt Weld
- (C) Concentric
- (D) Funnel
47. Coking of a heat exchanger:
- (A) can be eliminated with lime.
- (B) can be eliminated.
- (C) is not always possible to eliminate.
- (D) can be reduced with vibration of the unit.

53. When using High Temperature Hot Water generators, where is lower temperature water returned in the system?
- (A) To the expansion drum. (B) To the suction side of the circulator
- (C) To the inlet of the generator. (D) No return, water must be 100% make up.
54. What is an advantage of an inverted bucket trap?
- (A) They are small and light weight (B) It can be made for very high pressures
- (C) It continually discharges condensate as rapidly as it forms. (D) It withstands water hammer.



Equal Spread 45 degree Offsets
Figure b

- What is the length of AD in Figure b?
- (A) 145 (B) 124.3
- (C) 248.4 (D) 72.5
56. Which shielding gas is used primary for welding mild steel?
- (A) Argon (B) Carbon Dioxide
- (C) Hydrogen (D) Helium