Use the Tiger Crane capacity chart to answer the following questions.

Question	Answer
1. What is the load capacity with 15’ of boom at 60°?	
2. What is the radius at 15° and 574 Kilograms?	
3. What is the boom length and radius with highest load capacity?	
4. What is the boom length and radius with lowest load capacity?	
5. What is the load capacity at 8’ radius and 30° boom angle?	
6. What is the load capacity with a radius of 11’ and a 45° boom angle?	
7. What is the load capacity with a boom angle of 25° and 15’ boom length?	
8. Using a headache ball & hook, what is the load capacity at 75°, 9’ boom?	

Use the Manitex Load Rating Chart to answer the following questions.

Question	Answer
1. How much weight should be deducted from the rated capacity for the stowed fixed jib when boom is fully retracted?	
2. What does the bold line indicate on the load charts?	
3. List the items to be deducted from the gross load to achieve net load.	
4. What is the load block deduction?	
5. What is the boom length at 35’ radius, 75’ boom tip height, with fully extended outriggers?	
6. What is the rated capacity on mid outriggers at 35’ with a 70° boom angle?	
7. On full outriggers, what is the rated capacity with a 112’ boom at 62’ radius?	
8. What is the rated capacity with a 65’ boom, 12’ radius, on fully retracted outriggers?	
9. On full outriggers, you need to land a load on top of a structure. The structure is 35’ from your crane center of rotation and is 95’ tall. What boom angle would you use to determine rated load capacity?	
10. On full outriggers, you need to land a load on top of a structure. The structure is 65’ from your crane center of rotation and is 75’ tall. What boom configuration is needed?	

Use the Link-Belt Lifting Capacities document to answer the following questions.

Question	Answer
1. At what boom angle will loss of backward stability occur when operating without outriggers?	
2. What does the shaded areas on the load charts indicated?	
3. List the items to be deducted from the gross load to achieve net load.	
4. What is the maximum ground bearing pressure in pounds per square foot when using 5’ x 5’ outrigger pads.	
5. What is the maximum winch line pull: a. Low speed with three layers of type RB wire rope on the drum? b. High speed with one layer of type ZB wire rope on the drum? c. Low speed with four layers of RB wire rope on the drum?	
6. What radius would you use with 90 ft of boom at 60°?	
7. What is the whip line ground to hook distance with “no line out” at 110 ft. radius with approx. 43° boom angle?	
8. What is the capacity deduction if the auxiliary head is installed?	
9. What is the capacity deduction of the 51 Ft fly erected but not used?	
10. What is the capacity deduction of the 28.5 Ft fly erected and used?	

11. With a boom angle of 60° and a boom tip elevation of 90’, what is the radius?

12. With a load radius of 40’ and a boom length of 90’, what is the boom angle?

13. What is the 360° rated capacity on fully extended outriggers, 90’ of main boom “B” and a boom angle of 51.0°?

14. Operating in 360° mode with 110’ of main boom, 51’ fly off set at 20°, what is the boom angle and radius for lifting 2600 pounds?

15. The crane is set on fully extended outriggers with 110’ of main boom operating at a boom angle of 70°. The crane is equipped with a single part line of ¾” RB wire rope and an 8.5t hook ball. What is the maximum capacity that the machine can attain at this configuration?

16. The crane is set on fully extended outriggers and operating over the side. The crane is working from the main boom “A” with a 60.3’ boom at a 45’ radius. There is a 60t hook block, and 30 pounds of rigging on the line. What is the net capacity available?

17. The crane is set on fully extended outriggers. The delivery truck is to the north of the crane and load placement is to the west of the crane. 20mph winds are coming in from the west. Using the main boom “B” chart with an 80’ boom at a 45’ radius, what is the net capacity when there is the 8.5t hook ball and 20 pounds of rigging on the ¾” RB wire rope?

18. The crane is lifting a gross load of 6,274 Lbs. at a radius of 48’. The work is being done over the front of the crane with a 90 Ft main boom in “B” mode. At what percent of rated capacity is this lift?

19. The crane is set on fully extended outriggers and operating in “B” mode. The crane is hoisting a 7,000 Lbs. steel girder from the main boom over the side at a radius of 40’ and boom angle of 60°. The 60t hook block is reeved with 3-parts of ¾” RB wire rope and has 40 Lbs. of rigging attached. There is a 28.5’ fly installed and an 8.5t hook ball attached by ¾” RB wire rope. The hook ball position is 15’ below the fly sheaves. What is the gross load?

20. You are working for a contractor on a multi-employer project. Your employer has been notified of early delivery on materials with an approaching arrival time. The general contractor has a Link-Belt crane available and you have been asked to act as a qualified signal person for lifting and placing the materials. You have been provided copies of the load chart but information on the load is not yet available. Your Superintendent has not officially calculated the lift because it is expected that the materials will weigh less than 75% of the Link-Belt’s rated capacity. At 75% rated capacity, the general requires a critical lift calculation to be performed.

    Observing the crane in the field, it is set on fully extended outriggers and has a 60t hook block. The block is reeved with 2-parts of ¾” ZB wire rope. There is a whip line with an 8.5t headache ball resting about 10’ below the auxiliary head.

    The operator will need to pick the load off the truck bed that will be located about 70’ to the west of the crane, then place the load about 55’ to the south of the crane at ground level. Winds are expected to be at 20 mph.

    Using 70’ as your radius, 100’ main boom, and a 360° chart capacity:

    a. How much can the load weigh to make the pick?
    b. How much can the load weigh before it becomes a critical pick?
    c. As the Qualified Signal Person, what questions would you have prior to making the pick?

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