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Lab Physics-End of Chapter 18 Questions (pages 264-265)

**Review Questions (page 264)**

4. Density stays the same

5. Largest mass does not necessarily (and Doesn’t) have the largest volume

6. Both the same

7. Mass stays the same. Volume decreases. Therefore, density increases

9a. It takes a lot of force to permanently deform steel: It bounces back to its original shape

9b. Putty is easily deformed: It changes shape easily

10. The force exerted on a spring is directly proportional to the distance stretched or compressed.

11. The farthest that an object can be stretched or compressed without permanent deformation (changing its shape)

12. 9 cm (3 times the mass=3 times the stretch)

15. I beams have almost as much strength and much less weight.

16. The larger the object the smaller the strength to weight ratio (volume=weight, area=strength)

17a. A=22=4x

17b. V=23=8x

18. True, Area is proportional to length squared and volume to length cubed so volume increases at a faster rate

19. 10 grams of crushed ice because it has more surface area per unit weight.

20a. Elephant

20b. Mouse

**Think and Explain (page 265)**

1. Kilogram of Iron (less density so it takes up more space)

3. 8 cm

10. Each will stretch 4 cm (support half the weight)