

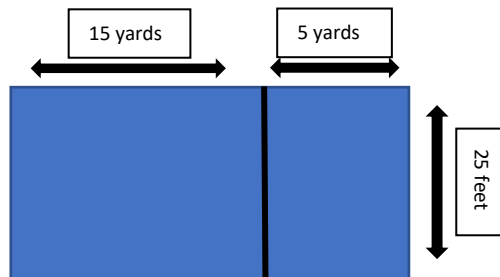
# CPO Practice Test Questions—2

## Calculations

(answers at the bottom)

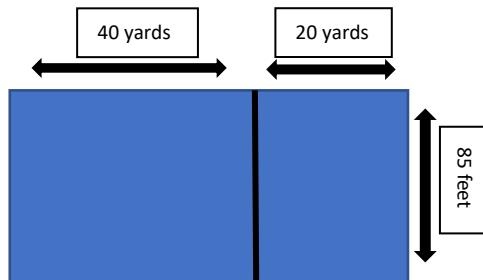
### Volume

1. You operate the pool below. The swimming has a constant slope that goes from 6 feet in the shallow area to 8 feet in the deep area. The diving well has a constant depth of 16 feet. What is the volume of this pool?



- a. 382,500   b. 104,063   c. 1,415,250   d. 1,131,525

2. You operate the pool below. The swimming has a constant slope that goes from 6 feet in the shallow area to 8 feet in the deep area. The diving well has a constant depth of 16 feet. What is the volume of this pool?



- a. 382,500   b. 1,147,500   c. 1,415,250   d. 1,315,250

3. Your spa measures 12 feet in diameter and has a constant depth of 2 feet. What is the volume of this spa?

### Flow Rate, Turnover Rate, Filter Media Rate, Filter Area

4. For a pool that has 62,000 gallons, what rate in gallons per minute (GPM) is needed for a 6-hour turnover rate?

- a. 172 gpm   b. 330 gpm   c. 758 gpm   d. 253 gpm

5. If the flow rate is 172 gpm, what square footage high-rate sand filter would be needed if it is designed to operate at 12 gpm?
- a. 10.4 b. 12.5 c. 14.3 d. 11.2
6. For a pool that has 91,000 gallons, what flow rate is needed for a 6-hour turnover rate?
- a. 208 gpm b. 330 gpm c. 758 gpm d. 253 gpm
7. If the flow rate is 125 gpm, what square footage high-rate sand filter would be needed if it is designed to operate at 12 gpm?
- a. 10.4 b. 12.5 c. 1500 d. 11.2
8. What is the turnover rate for a pool that has a volume of 100,000 gallons and a flow rate of 175 gpm?
- a. 952 gpm b. 10 gpm c. 7.4 gpm d. 9.52 gpm
9. What is the turnover rate for a pool that has a volume of 250,000 gallons and a flow rate of 600 gpm?
- a. 6.9 gpm b. 70 gpm c. 69 gpm d. 690 gpm
10. For a pool with 100,000 gallons, what should the flow rate be to achieve a 6-hour turnover rate?
- a. 27.7 gpm b. 277.7 gpm c. 390 gpm d. 39.7 gpm
11. For a pool with 350,000 gallons, what should the flow rate be to achieve a 6-hour turnover rate?
- a. 972 gpm b. 72 gpm c. 250 gpm d. 9.72 gpm
12. Your pool's pump has a maximum output of 350 gpm. The DE system you have uses 2 ft. X 2 ft. grids. The FMR is 2.0 gpm for a vacuum DE filter without a slurry. How many grids are required?
- a. 12 grids b. 2 grids c. 18 grids d. 22 grids

### **Saturation Index**

13. A 62,000-gallon pool has the following readings:

Temperature: 76 degrees

pH: 7.3

Total Alkalinity: 125 ppm

Calcium Hardness: 200 ppm

TDS: 900 ppm

What is the saturation index?

- a. +1.1 b. -1.1 c. +0.8 d. -0.2

This water is:

- a. scale forming b. corrosive c. balanced

Which chemicals are outside the ideal range?

14. A 55,000-gallon pool as the following readings:

Temperature: 84 degrees

pH: 7.1

Total Alkalinity: 50 ppm

Calcium Hardness: 100 ppm

TDS: 1750 ppm

What is the saturation index?

- a. +1.1 b. -1.1 c. +0.8 d. -0.4

This water is:

- a. scale forming b. corrosive c. balanced

Which chemicals are outside the ideal range?

### **Chemical Dosage Calculations**

15. You have determined that you need to add 36 ounces of soda ash to your pool. How many pounds is that?

- a. 3.25 b. 2.5 c. 2.25 d. 4.0

16. You have determined that you need to add 500 ounce of sodium bicarbonate to your pool. How many pounds is that?

- a. 32 lbs. b. 31.25 lbs. c. 3.1 lbs. d. 310 lbs.

17. You have determined from your water tests that you need to add 640 fluid ounces of sodium hypochlorite to breakpoint chlorinate your pool. How many gallons do you need to add?

- a. .5 gallons b. 59 gallons c. 5 gallons d. 50 gallons

18. You have determined that you need to add 60 fluid ounces of muriatic acid to your pool. How many cups is that?

- a. 2.2 cups b. 75 cups c. .75 ups d. 7.5 cups

### **Surface Area**

19. What is the surface area of a pool that is 25 yards long and 25 meters wide?

20. What is the surface area of a pool that is 104 feet long and 90 feet wide?

21. Your DE filter has 8 grids measuring 18 inches by 18 inches. Each grid filters from both sides. What is the filter surface area?

22. Your spa measures 10 feet in diameter. What is the surface area?

1. B

2. B

3. 1695.5

4. A

5. C

6. D

7. A

8. D

9. A

10. B

11. A

12. D (balanced, pH and alkalinity are not in ideal range)

13. D (balanced, pH, alkalinity and hardness are not in ideal range)

14. B

15. C

16. B

17. C

18. D

19. 6150 sq. ft.

20. 9360 sq. ft.

21. 36 sq. ft.

22. 78.5 sq. ft.