

Powerprep Plus 3 Quant Set 4 Answers

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1) C

SET 4

Correct rate: 93%

Difficulty: difficult

$$(\sqrt{y+5} - \sqrt{y})(\sqrt{y+5} + \sqrt{y}) = y + 5 - y = 5$$

2) C

SET 4

Correct rate: 70%

Difficulty: difficult

The title says that $y=g(x)$ has 3 intersections with the x-axis, and find the number of intersections between $y=g(x-5)$ and the x-axis. Because $y=g(x-5)$ is equivalent to shifting the image of $y=g(x)$ by 5 units to the right, it will not affect the number of intersections between the image and the x-axis, so it is still 3

3) D

SET 4

Correct rate: 79%

Difficulty: difficult

$$m = n \times (n + 2) \times k$$

$$\frac{m}{n} = \frac{n \times (n + 2) \times k}{n} = (n + 2) \times k$$

4) D

SET 4

Correct rate: 52%

Difficulty: difficult

(unit, ten, hundred, thousands, etc.)

If x is 10001 and greater than 7999, the thousands digit is less than 6.

5) C

SET 4

Correct rate: 54%

Difficulty: difficult

The product of the integers from n to p , inclusive; inclusive contains all (Specially 0)

6) C

SET 4

Correct rate: 83%

Difficulty: difficult

$$\frac{x}{100} \times y = \frac{3}{4}z \Rightarrow \frac{xy}{z} = \frac{300}{4} = 75$$

7) D

SET 4

Correct rate: 70%

Difficulty: difficult

There is no connection between the percentile and the mean

8) C

SET 4

Correct rate: 88%

Difficulty: difficult

$$R_1 = AB + \frac{(O_1O_2 - AB)}{2} = 3 + 3 = 6$$

$$C_1 = 2\pi R_1 = 2\pi \times 6 = 12\pi$$

9) B

SET 4

Correct rate: 83%

Difficulty: difficult

$$4^{-N} = \frac{1}{4^N} = \frac{1}{2^{2N}} < \frac{1}{512} = \frac{1}{2^9} \Rightarrow N = 5$$

10) D

SET 4

Correct rate: 77%

Difficulty: difficult

We need to subtract two thickness (0.25)

$$Volume = (12 - 0.25 - 0.25) \times (18 - 0.25 - 0.25) \times (24 - 0.25 - 0.25) \cong 4,700$$

11) B

SET 4

Correct rate: 89%

Difficulty: difficult

After reading the discussion below, I understand how to do it: draw a vertical line from point B down to the X axis, record it as point D, coordinate (4, 0). So AODB forms a trapezoid. Then the required AOBC area can be the

$$\begin{aligned} \text{trapezoidal AODB area} - \text{triangular BCD area} &= \frac{(OA + BD)}{2} \times OD - \frac{BD \times DC}{2} \\ &= \frac{(3 + 5)}{2} \times 4 - \frac{5 \times 1}{2} = 16 - 2.5 = 13.5 \end{aligned}$$

12) C

SET 4

Correct rate: 75%

Difficulty: difficult

Let A and B be the number of people in each group

$$\frac{41A + 36B}{A + B} = 38$$

$$41A + 36B = 38A + 38B$$

$$3A = 2B$$

B:A = 3:2 What the

question asks: $\frac{B}{A + B} = \frac{3}{2 + 3} = \frac{3}{5}$

13) B

SET 4

Correct rate: 82%

Difficulty: difficult

When the hundreds digit is 1, $C(8,2)$
 $= \binom{8}{2}$ means that (2 – 9 (8 numbers) is taken first and then **sorted by size**).

When the hundreds digit is 2, $C(7,2)$
 $= \binom{7}{2}$ means that (3 – 9 (7 numbers) is taken first and then **sorted by size**)

respectively $28 + 21 = 49$

14) E

SET 4

Correct rate:94%

Difficulty: difficult

$$\text{Range} = 35,400 - 8,600 = 26,800 \$$$

15)D

SET 4

Correct rate: 89%

Difficulty: difficult

if the cost in 1994 is x ; $x(1 + 0.45)(1 + 0.26) = 9,100 \Rightarrow x = \frac{9,100}{(1.45)(1.26)}$

16) C

SET 4

Correct rate: 69%

Difficulty: difficult

Project	Average Cost	75% Average Cost	Average Return
Attic Bedroom Addition	32,700	24,525	28,000
Bathroom remodeling	10,400	7,800	10,000
Deck addition	9,100	6,825	4,400
Family room addition	35,300	26,475	24,400
Home Office addition	9,500	7,125	6,100
Major kitchen remodeling	35,400	26,550	35,300
Minor kitchen remodeling	10,000	7,500	7,100
Window replacement	8,600	6,450	2,200

17) B, C

SET 4

Correct rate: 63%

Difficulty: difficult

$$\text{apples} + \text{peaches} + \text{mangoes} = 105$$

$$B: \frac{\text{apples}}{\text{mangoes} + \text{peaches}} = \frac{1}{6}$$

$$C: \frac{\text{mangoes}}{\text{peaches}} = \frac{43}{47}$$

18) B

SET 4

Correct rate: 64%

Difficulty: difficult

Suppose only the chess is X, the bridge only is Y, and the both is Z

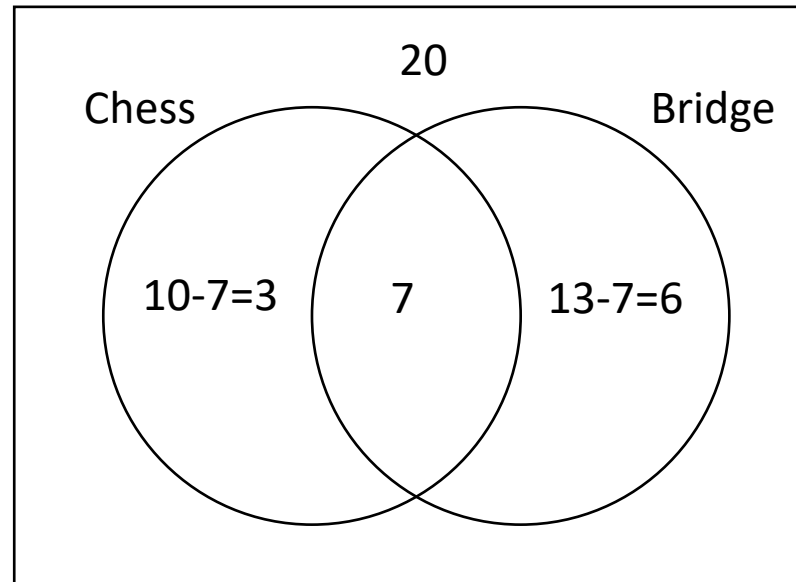
$$X + Y + Z = 36 - 20 = 16$$

$$X + Y = 10$$

$$X + Z = 13$$

Solve X = 7

$$10 - 7 + 13 - 7 = 9$$



19) B,D

SET 4

Correct rate: 39%

Difficulty: difficult

<i>Roots</i>	$x = -3$	$x = 0$	$x = 5$	
<i>Status</i>	-	+	-	+

20) 24

SET 4

Correct rate: 73%

Difficulty: difficult

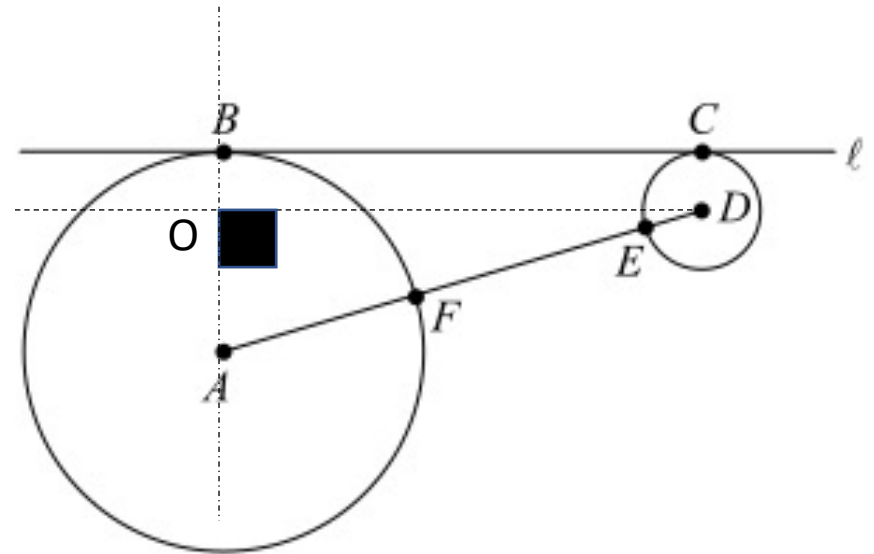
$$OA = AB - BO = 10 - 3 = 7$$

$$BC = OD$$

$$OA^2 = OD^2 + AD^2 = OD^2 + (AF + FE + ED)^2$$

$$\Rightarrow OD^2 = (AF + FE + ED)^2 - OA^2 = (10 + 12 + 3)^2 - 7^2 = 576$$

$$\Rightarrow OD = \sqrt{576}$$



Thanks