

# Powerprep Plus 1 Quant Set 4 Answers

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1) C

SET 4

Correct rate: 93%

Difficulty: difficult

$$(1/3) \times 10 + (3/4) \times 15 + (1/12) \times 25 = 12.5$$

2) C

SET 4

Correct rate: 92%

Difficulty: difficult

3) A

SET 4

Correct rate: 86%

Difficulty: difficult

$$6 \leq x \leq 5$$

$$-5 \leq -y \leq -2$$

$$1 \leq x - y \leq 3$$

$$\frac{2}{3} \leq \frac{2}{x - y} \leq 2$$

4) C

SET 4

Correct rate: 85%

Difficulty: difficult

$$f(x) = x(x - 2)(x + 2)$$

$$x = 0$$

$$x = 2$$

$$x = -2$$

5) D

SET 4

Correct rate: 84%

Difficulty: difficult

$$0 < r < v < x < y < z$$

$$0 < 1 < 2 < 3 < 4 < 5$$

$$\text{Average 1} = \frac{r + v + y + z}{4} = \frac{1 + 2 + 4 + 5}{4} = 3$$

$$\text{Average 2} = \frac{r + v + x + y + z}{5} = \frac{1 + 2 + 3 + 4 + 5}{5} = 3$$

$$0 < 1 < 2 < 4 < 5 < 6$$

$$\text{Average 1} = \frac{r + v + y + z}{4} = \frac{1 + 2 + 5 + 6}{4} = 3.5$$

$$\text{Average 2} = \frac{r + v + x + y + z}{5} = \frac{1 + 2 + 4 + 5 + 6}{5} = 3.6$$

6) C

SET 4

Correct rate: 91%

Difficulty: difficult

$$V = \pi r^2 h \Rightarrow 2000\pi = \pi r^2 16r \Rightarrow r^3 = 125 \Rightarrow r = 5$$

7) C

SET 4

Correct rate: 88%

Difficulty: difficult

$$C_1 = 5$$

$$C_2 = \frac{1}{5} C_1 = 1$$

$$C_3 = \frac{1}{5} C_2 = \frac{1}{5}$$

$$C_4 = \frac{1}{5} C_3 = \frac{1}{5^2}$$

$$C_5 = \frac{1}{5} C_4 = \frac{1}{5^3}$$

$$C_n = \frac{1}{5} C_{n-1} = \frac{1}{5^{n-2}}$$

$$C_{10} = \frac{1}{5} C_9 = \frac{1}{5^8}$$

$$C_{25} = \frac{1}{5} C_{24} = \frac{1}{5^{23}}$$

$$C_{10} = \frac{1}{5^8} = 5^{15} C_{25}$$



8) C

SET 4

Correct rate: 89%

Difficulty: difficult

$$\frac{3}{100}x = \frac{5}{100}y$$

$$x + y = 6400$$

$$x + \frac{3}{5}x = 6400$$

$$x = 4000$$

$$y = 2400$$

$$\frac{3}{100}x + \frac{5}{100}y = 120 + 120 = 240$$

9) A, B

SET 4

Correct rate: 78%

Difficulty: difficult

$$4 < x < 6$$

$$3 < y < 6$$

$$12 < xy < 36 \quad \text{square inches}$$

$$\frac{12}{12 \times 12} < xy < \frac{36}{12 \times 12} \quad \text{square feet}$$

$$\frac{1}{12} < xy < \frac{1}{4} \quad \text{square feet}$$

$$\frac{2}{24} < xy < \frac{6}{24} \quad \text{square feet}$$

10) D

SET 4

Correct rate: 73%

Difficulty: difficult

Find the smallest difference between two digits, then the difference between the digits in the tens place should be small, so you can choose the digits in the tens place as 2, 4, 6. Then the large two digits in the ten's place should be the small ones. So there are two sets of numbers, (46, 29) (62, 49), the smaller difference is (62, 49), and the difference is 13.

11) E

SET 4

Correct rate: 90%

Difficulty: difficult

$$\begin{aligned}x + 4 + (2x + 5 - (6 - x)) + x + 6 - x + x + x + 4 + 2x + 5 \\= 8x + 18\end{aligned}$$

12)B

SET 4

Correct rate: 96%

Difficulty: difficult

$$p + r + s = 1$$

$$r = 1 - 3p$$

$$\Rightarrow p + 1 - 3p + s = 1 \Rightarrow s = 2p$$

13)A

SET 4

Correct rate: 94%

Difficulty: difficult

$$d = 12k + 5$$

$$d^2 = 144k^2 + 25 + 120k$$

14) D

SET 4

Correct rate:62%

Difficulty: difficult

$$75\% \times \frac{20\%}{25\%} = 60\%$$

15)B

SET 4

Correct rate: 58%

Difficulty: difficult

$$\frac{8 \times 4\%}{2.5} = 0.128 \cong 0.13$$



16) A

SET 4

Correct rate: 85%

Difficulty: difficult

$$8,000,000 \times \frac{20}{100} = 1,600,000$$

$$\frac{16,000}{1,600,000} = 0.01$$

17)E

SET 4

Correct rate: 90%

Difficulty: difficult

$$\text{whole price} = 30\$$$

$$\text{sale price} = 30 + 30 \times 40\% = 42\$$$

$$\text{sale price} = \text{list price} - 25\% \text{ list price} = 75\% \text{ list price} = \frac{75}{100} \text{ list price}$$

$$\Rightarrow \text{list price} = \frac{100}{75} \text{ sale price} = \frac{100}{75} \times 42 = 56\$$$

18) B

SET 4

Correct rate: 61%

Difficulty: difficult

$$\text{Set: } (n, n + x, n + y), n + n + x + n + y = 10$$

$$\Rightarrow 3n + x + y = 10$$

$$\Rightarrow n = 1, \quad 0 \leq x, y \leq 7$$

$$\Rightarrow n = 2, \quad 0 \leq x, y \leq 4$$

A: (2,3,5), (1,3,6)

B: (1,3,6)

C: (2,3,5), (1,3,6)

19) D

SET 4

Correct rate: 65%

Difficulty: difficult

$$\frac{1}{n} + \frac{1}{n} + \frac{1}{n-3} = \frac{3n-6}{n(n-3)}$$

20)3/4

SET 4

Correct rate: 48%

Difficulty: difficult

$$v^\circ + w^\circ + x^\circ = 180 \Rightarrow 110^\circ + w^\circ + x^\circ = 180 \Rightarrow w^\circ + x^\circ = 70$$

$$w^\circ + x^\circ + y^\circ + z^\circ = 180 \Rightarrow w^\circ + x^\circ + 2w^\circ + x^\circ = 180 \Rightarrow 3w^\circ + 2x^\circ = 180$$

$$\Rightarrow w^\circ = 40, \quad x^\circ = 30$$

# Thanks