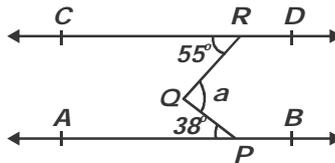


1 → What are the factors of the given expression?

$$16x^2 - 72xy + 81y^2 - 12x + 27y$$

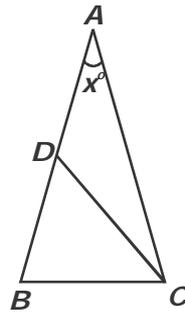
- (A) $(6x - 7y)(6x - 7y - 5)$
 (B) $(4x - 9y)(4x - 9y - 3)$
 (C) $(4x + 9y)(4x + 9y + 3)$
 (D) $(6x + 7y)(6x - 7y + 5)$

2 → In the figure $AB \parallel CD$, find the value of $\angle a$.



- (A) 93° (B) 103° (C) 83° (D) 97°

3 → In $\triangle ABC$, $AB = AC$ and D is a point on AB such that $AD = DC = BC$. Find $\angle BAC$.



- (A) 45° (B) 36° (C) 72° (D) 90°

4 → When a number 984 is added to another 3 digit number $4p3$, we get a four digit number $13q7$, which is divisible by 11. What is the value of $p + q$?

- (A) 10 (B) 11 (C) 12 (D) 13

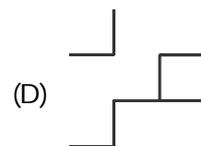
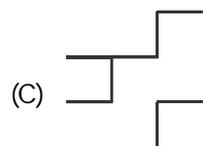
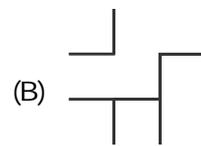
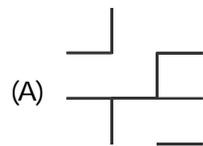
5 → If 5 persons weave 180 shawls in 12 days, how many shawls will 6 persons weave in 15 days?

- (A) 260 (B) 370 (C) 270 (D) 360

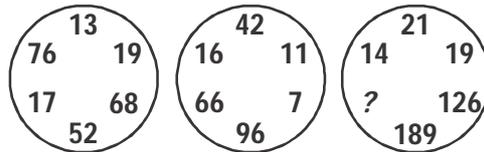
Class – IX

Reasoning

6 → Which of the following figure replaces second pair same as first pair?

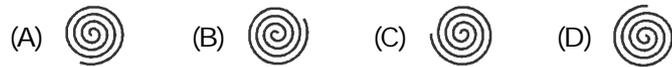


7 **Which number replaces the question mark?**

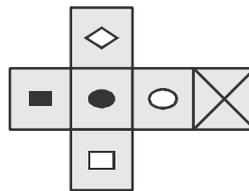


- (A) 133 (B) 171 (C) 152 (D) 114

8 **Which one is different from others?**



9 **Which cube can be made from this shape?**



- (A) (B) (C) (D)

10 **A is the son of C; C and Q are sisters; Z is the mother of Q and P is the son of Z. Which of the following statements is true?**

- (A) P and A are cousins
 (B) P is maternal uncle of A
 (C) Q is the maternal grandfather of A
 (D) C and P are sisters

- 11 **What is the shortcut key to insert today's date in MS-Word 2010?**
- (A) Shift + Ctrl + D (B) Shift + Alt + D
(C) Shift + Home + D (D) Shift + End + D
- 12 **Where does the operating system files are stored?**
- (A) Cache (B) Ram
(C) Hard disk (D) Pen drive
- 13 **What are drop shadow, inner glow and bevel in Photoshop?**
- (A) Filters (B) Blending options
(C) Image adjustments (D) Layer modes
- 14 **Which electronic commerce focuses on non-commercial customers or consumers?**
- (A) B2B e-commerce (B) B2C e-commerce
(C) B2E e-commerce (D) C2C e-commerce.
- 15 **What is the shortcut key to insert line break manually without breaking paragraph in MS-Word 2010?**
- (A) Home + Enter (B) Ctrl + Enter
(C) Shift + Enter (D) Alt + Enter

16 Which of the following words replaces the blank?

There are no black clothes in Rakesh's wardrobe as he has _____.

- (A) electrophobia (B) musophobia
(C) melanophobia (D) acousticophobia

17 What does 'INSOLENT' mean?

- (A) Selfish (B) Rude
(C) Playful (D) Stubborn

18 Which meaningful word can be formed by unscrambling the letters of 'NLOECES'?

- (A) Closeen (B) Losceen
(C) Enclose (D) Elsenoc

19 Identify the MISSPELT word.

- (A) Fluorescent (B) Seize
(C) Heirarchy (D) Mischievous

20 Identify the correct idiom that can replaces the blank.

The intense competition is making me _____.

- (A) face the music (B) a bag of nerves
(C) a standing joke (D) a dog in the manger



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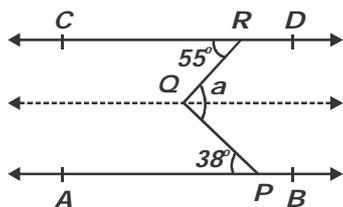
Solutions for Sample Questions

class : 9

Mental Ability

1. (B) $16x^2 - 72xy + 81y^2 - 12x + 27y$
 $= (4x)^2 - 2(4x)(9y) + (9y)^2 - 3(4x - 9y)$
 $= (4x - 9y)^2 - 3(4x - 9y)$
 $= (4x - 9y)(4x - 9y - 3)$

2. (A) $CD \parallel AB$ (Given)



$$\angle a = 55^\circ + 38^\circ = 93^\circ$$

3. (B) Let $\angle BAC = x^\circ$,
 In $\triangle ADC$, $AD = DC$,
 $\therefore \angle ACD = x^\circ$
 $\therefore \angle BDC = x^\circ + x^\circ = 2x^\circ$
 In $\triangle BDC$, $DC = BC$,
 $\therefore \angle DBC = 2x^\circ$
 In $\triangle ABC$, $AB = AC$,
 $\therefore \angle ACB = 2x^\circ$

$$\text{Also } \angle BAC + \angle ABC + \angle ACB = 180^\circ$$

(angles of a triangle)

$$\Rightarrow x^\circ + 2x^\circ + 2x^\circ = 180^\circ$$

$$\Rightarrow x^\circ = 36^\circ$$

$$\therefore \angle BAC = 36^\circ$$

4. (A)
$$\begin{array}{r} 984 \\ + 4p3 \\ \hline 13q7 \end{array}$$

$$\text{We get } 8 + p = q$$

Now if $13q7$ is divisible by 11 then

$$(7 + 3) - (1 + q) = 11k$$

where, $k = 0, 1, 2, \dots$

$$10 - (1 + q) = 0$$

$$\Rightarrow q = 9$$

here $k = 0$ is the only possible value because if $k = 1$ then q must be either -2 or 20 .

but neither -2 nor 20 is possible because q is a single positive digit i.e., $q \in \{1, 2, 3, 4, 5, 6, 7, 8, 9, 0\}$

Thus, the value of $p + q = 1 + 9 = 10$

$$\left[\begin{array}{l} \text{Since, } p = 9 - 8 \\ \text{Therefore, } p = 1 \end{array} \right]$$

5. (C) 5 persons \rightarrow 180 shawls \rightarrow 12 days

$$5 \text{ persons} \rightarrow \frac{180}{12} \text{ shawls} \rightarrow 1 \text{ day}$$

$$1 \text{ person} \rightarrow \frac{180}{12 \times 5} \text{ shawls} \rightarrow 1 \text{ day}$$

$$= 3 \text{ shawls}$$

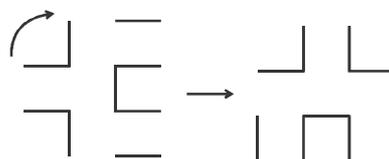
$$\therefore 6 \text{ persons} \rightarrow 6 \times 3 \text{ shawls} \rightarrow 1 \text{ day}$$

$$\Rightarrow 6 \text{ persons} \rightarrow 6 \times 3 \times 15 \text{ shawls} \rightarrow 15 \text{ days}$$

$$= 270 \text{ shawls}$$

Reasoning

6. (D) Figure 1 is rotated 90° to give figure 2.



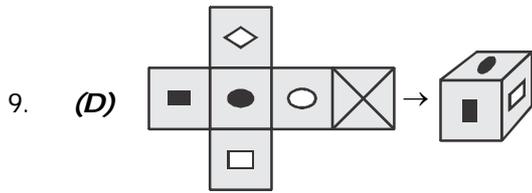
Similarly, figure 3 can be rotated to give figure D.

7. (B) $13 \times 4 = 52$; $17 \times 4 = 68$; $19 \times 4 = 76$

$$7 \times 6 = 42$$
; $11 \times 6 = 66$; $16 \times 6 = 96$

$$14 \times 9 = 126$$
; $21 \times 9 = 189$; $19 \times 9 = 171$

8. (B) Except option (B), all the figures are obtained by rotation.



10. (B) C and Q are sisters and A is the son of C. Hence, C is the mother of A or Z is the mother Q. Hence, Z is the maternal grandmother of A. P is the son of Z. Hence, **P is the maternal uncle of A.**

Computers

11. (B) The shortcut key to insert today's date in MS-Word 2010 is **shift + Alt + D.**
12. (C) Operating system files are stored in **hard disk.**

13. (B) Drop shadow, inner glow and bevel are the **Blending options** in Photoshop.
14. (B) **B2C e-commerce** is between business and consumers, which is a non-commercial commerce.
15. (C) Shortcut key to insert line break manually without breaking a paragraph in MS-Word is **Shift + Enter.**

English

16. (C) There are no black clothes in Rakesh's wardrobe as he has **melanophobia.**
17. (B) Insolent means **rude.**
18. (C) NLOECES - **ENCLOSE**
19. (C) **'Hierarchy'** is the correct spelling.
20. (B) The intense competition is making me **a bag of nerves.**

