

PRACTICE SET 1

A Whole Content Based Test for Class 6th Mathematics Asiad

1. Harsimran bought $8m + 5n$ books from bookstore. If each m book costs ₹ 25.75 and each n book costs ₹ 35.75, then find the total cost of the books.

A ₹ 384.75 B ₹ 392.25
C ₹ 350.25 D None of the above

2. Simplify and choose the correct option.

$$9 + [9z - \{6 + 3y - (2z - 3y) - 3\}]$$

A $21z + 18y + 12$ B $18y - 21z - 12$
C $11z + 9y - 6$ D $11z - 6y + 6$

3. A vessel has 5L and 500 mL of juice. How many glasses each of capacity 25 mL can be filled with the given quantity of milk?

A 240 B 230
C 220 D 180

4. Mrs. Banerjee prepared a dessert in the given ratio as per the table. Fill in the missing numbers in the table.

Number of spoons of sugar	4	10	15	—	24
Number of spoons of gelatin	12	30	—	54	—

A 45, 18, 72
B 60, 20, 68
C 30, 60, 90
D 45, 20, 60

5. Evaluate the following expression and choose the correct option, if $a = 2$, $b = 4$ and $c = -1$.

$$(ab - ac) \div abc$$

A $-\frac{2}{3}$ B $-\frac{5}{4}$
C $\frac{7}{6}$ D None of these

6. What is the missing value in the box?

$$1\frac{2}{4} + \square = 2\frac{3}{12}$$

A $\frac{5}{12}$ B $\frac{5}{4}$
C $\frac{7}{12}$ D $\frac{9}{12}$

7. **STATEMENT** Two numbers have 16 as HCF and 308 as LCM. The statement is

A true
B false
C No conclusion can be drawn.
D None of the above

8. The line which divides a circle equally is called

A chord
B radius
C secant
D diameter

9. The number of star fish and gold fish in an aquarium is in the ratio 3 : 7. After adding 25 more gold fish into the aquarium, the new ratio of the star fish to gold fish became 6 : 19. How many star fish and gold fish are there in the aquarium now?

A 30, 70
B 60, 140
C 3, 7
D None of the above

10. Number name for 70,09,00,800 is

A seven nine and eight
B seven crore nine thousand and eight hundred
C seventy crore nine lakh and eight hundred
D None of the above

11. What is the difference between $1\frac{1}{18}$ and $2\frac{2}{3}$ of 16 and $\frac{1}{3}$

$$1\frac{1}{18} - \frac{1}{3}$$

A $10\frac{1}{2}$

B $\frac{17}{2}$

C $\frac{19}{4}$

D None of the above

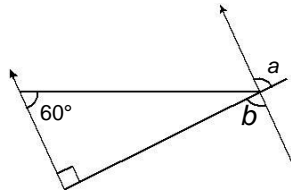
12. Vessels *P* and *Q* have 145 L and 116 L of liquid, respectively. What should be the volume of the largest possible container which can measure out the liquid exact number of times?

A 1 L
 B 29 L
 C 4 L
 D None of the above

13. If 27432* is divisible by 6, then least value of * is

A 0
 B 6
 C 2
 D 4

14. What is the value of $\angle a + \angle b$ in the given figure?

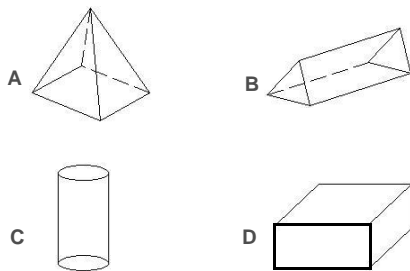


A 75°
 B 90°
 C 150°
 D 180°

15. Angle inscribed in a semicircle is

A obtuse angle
 B right angle
 C acute angle
 D straight angle

16. Which of the following has 6 faces?



17. Choose the correct statement.

A Every diameter of a circle is a chord.
 B Every chord of a circle is a diameter.
 C Radius of the circle is the largest chord.
 D None of the above

18. Niharika finds the average of her three most recent badminton scores by using the following expression, where *A*, *B* and *C* are the three scores: $\frac{a+b+c}{3} \cdot 100$. Which of

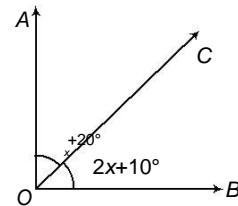
the following would also determine the average of her scores?

A $\frac{a}{3} + \frac{b}{3} + \frac{c}{3} \cdot 100$
 B $\frac{(a+b+c) \cdot 3}{100}$
 C $\frac{a+b+c}{3}$
 D $\frac{100}{a+b+c} + 1003$

19. Which of the following is divisible by 11?

A 234612
 B 1101123
 C 1122334
 D None of the above

20. Given that $\angle AOB$ is a right angle, find the measure of $\angle AOC$ and $\angle COB$.



A 70° and 20°
 B 30° and 60°
 C 45° and 45°
 D 40° and 50°

21. If $a - b = 7 \cdot a - 3 \cdot b$, then $6 - 4$ is equal to

A 25
 B 30
 C 40
 D 50

22. The smallest number which when divided by 30, 35, 45 and 50 leaves remainders 24, 29, 39 and 44, respectively is

A 3150
 B 3144
 C 3462
 D 3223

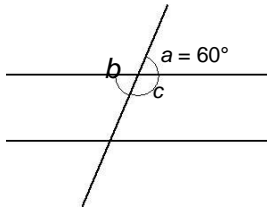
23. A tank was 0.2 full. When another 600 mL of water was poured into the tank, it became half full. How much water was in the tank at first?

A 2 L
 B 250 mL
 C 750 mL
 D 3.5 L

24. If $x = 2$, $y = 3$ and $z = -2$, then the value of $4x + 6z - (x + 3y - 3x) + 5y$ will be
- A 4 B 5
C 6 D 8

25. Ruchika bought some pens and exercise books for ₹ 107.00. There were 5 less pens than exercise books and each pen cost ₹ 25.00 and each exercise book cost ₹ 4.00, then the number of exercise books did she buy is equal to
- A 9
B 8
C 10
D 12

26. What are the values of $\angle b$ and $\angle c$?



- A 60° and 120°
B 60° and 60°
C 120° and 60°
D 120° and 120°
27. If a number is divisible by two coprime numbers, then it is divisible by their also. _____
- A sum
B difference
C product
D multiple

28. Aakanksha, Banu and Katrina draw 3 cards each from 9 cards numbered from 1 to 9.

[Aakanksha : A, Banu : B, Katrina = K]

A: The product of my numbers is 48.

B: The sum of my numbers is 15.

K: The product of my numbers is 63. What is the largest number in the cards of Katrina?

- A 8
B 7
C 9
D 6

29. A group of 30 persons can consume 48 kg of rice in 4 days. In how many days can 40 persons consume 240 kg of rice?

- A 30
B 25
C 15
D None of the above

30. Kareena had some nailpaints. She gave $\frac{1}{3}$ of them and $\frac{1}{3}$ more nailpaints to Mala. She then gave $\frac{1}{4}$ of the remainder to Ankit but

took back one nailpaint. If Kareena is left with 30 nailpaints, then how many nailpaints did she have at first?

- A 170
B 142
C 159
D 189

Solutions

1. (a) Number of books bought = $8m + 5n$
 Cost of 1 m book = ₹ 25.75
 Cost of 1 n book = ₹ 35.75
 \therefore Total cost
 $= 8(25.75) + 5(35.75)$
 $= 206 + 178.75$
 $= ₹ 384.75$

2. (d) Consider $9 + [9z - \{6 + 3y - (2z - 3y) - 3\}] =$
 $9 + [9z - \{6 + 3y - 2z + 3y - 3\}]$
 $= 9 + [9z - 6 - 3y + 2z - 3y + 3]$
 $= 9 + 9z - 6 - 3y + 2z - 3y + 3$
 $= 9 + 3 - 6 + 9z + 2z - 3y - 3y$
 $= 6 + 11z - 6y$

3. (c) Quantity of juice = 5 L and 500 mL
 $= 5000 \text{ mL} + 500 \text{ mL}$ [Q 1 L = 1000 mL]
 $= 5500 \text{ mL}$

Capacity of one glass = 25 mL
 \therefore Number of glasses it can fill = $\frac{5500}{25}$

4. (a) We have,
 $\frac{4}{12} = 10 = \frac{15}{30} = \frac{y}{54} = 24$
 $\frac{4}{12} = \frac{y}{54}$
 $4 \cdot 54 = 12 \cdot y$
 $216 = 12y$
 $y = \frac{216}{12} = 18$

Also, $\frac{4}{12} = \frac{24}{z}$
 $4z = 12 \cdot 24$
 $z = \frac{12 \cdot 24}{4} = 72$

5. (b) Consider $(ab - ac) \mid abc$
 For $a = 2, b = 4$ and $c = -1$,
 $\{(2 \cdot 4) - (2) \cdot (-1)\} \mid 2 \cdot 4 \cdot (-1)$
 $= \{8 + 2\} \mid (-8) = \underline{10} = -\underline{5}$

6. (d) Here, $\frac{27}{12} - \frac{6}{4} = \frac{27}{12} - \frac{18}{12} = \frac{9}{12} = \frac{3}{4}$

7. (b) LCM must be divisible by HCF.
 8. (d) By definition
 9. (a) Let star fish be denoted by S and gold fish by G .

$\therefore S : G = 3 : 7$
 $\Rightarrow S = \frac{3}{7} G$

\therefore We have,
 $\frac{S}{G + 25} = \frac{6}{19}$

$\Rightarrow 19S = 6G + 150$
 $\Rightarrow 19 \cdot \frac{3}{7} G = 6G + 150$
 $\Rightarrow 57G = 42G + 150 \cdot 7$
 $\Rightarrow 15G = 150 \cdot 7$
 $\Rightarrow G = 70$
 $\therefore S = \frac{3}{7} \cdot 70 = 30$

10. (c) Consider 70,09,00,800
 Seventy crore nine lakh and eight hundred

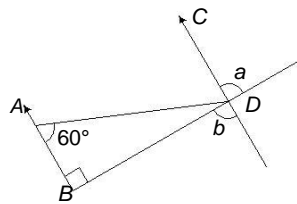
11. (a) Consider $\frac{2}{3} - \frac{1}{18} = \frac{1}{18}$
 $\frac{2}{3} - \frac{1}{18} = \frac{12}{18} - \frac{1}{18} = \frac{11}{18}$

$\Rightarrow 32 - 1 \frac{11}{18} = 30 \frac{7}{18}$
 $\Rightarrow \frac{64 - 11}{18} = \frac{53}{18}$ [Q LCM of 3 and 6 = 6]
 $= \frac{63}{18} = \frac{21}{6}$
 $= 10 \frac{1}{2}$

12. (b) Required volume = HCF (145, 116)
 $= \text{HCF}(5 \cdot 29, 2 \cdot 2 \cdot 29)$
 $= 29 \text{ L}$

13. (a) Given, 27432* must be divisible by 6.
 So, 27432* must be divisible by 2 and 3.
 To be divisible by 2,
 $* = 2, 4, 6, 8, 0$
 To be divisible by 3,
 $2 + 7 + 4 + 3 + 2 + * \text{ must be divisible by 3.}$
 i.e. $18 + * \text{ must be divisible by 3.}$
 $\therefore * = 0, 6$
 Now, $0 < 6$
 $\therefore * = 0$

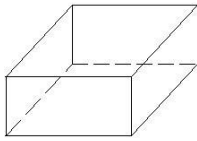
14. (d)



Given, $AB \parallel CD$
 $\therefore \angle ABD + \angle CDB = 180^\circ$ [angles on same side of transversal]
 $\therefore \angle CDB = 90^\circ$ [$\angle ABD = 90^\circ$]
 Now, $\angle a + \angle CDB = 180^\circ$ [linear pair]
 $\therefore \angle a + 90^\circ = 180^\circ$
 $\Rightarrow \angle a = 90^\circ$
 $\therefore \angle a + \angle b = 90^\circ + 90^\circ = 180^\circ$

15. (b) By definition

16. (d)



17. (a) By definition

$$\begin{aligned} 18. \text{ (a) Average of scores} &= \frac{a+b+c}{3} \cdot 100 \\ &= \frac{a}{3} + \frac{b}{3} + \frac{c}{3} \cdot 100 \end{aligned}$$

19. (d) None of them is divisible by 11.

20. (d) Given, $\angle AOB$ is a right angle.

$$\begin{aligned} \therefore x + 20^\circ + 2x + 10^\circ &= 90^\circ \\ \Rightarrow 3x + 30^\circ &= 90^\circ \\ \Rightarrow 3x &= 60^\circ \\ \Rightarrow x &= 20^\circ \\ \therefore \angle AOC &= x + 20^\circ \\ &= 20^\circ + 20^\circ = 40^\circ \\ \text{and } \angle COB &= 2x + 10^\circ \\ &= 2 \cdot 20^\circ + 10^\circ = 50^\circ \end{aligned}$$

21. (b) Given, $a \cdot b = 7 \cdot a - 3 \cdot b$

$$\begin{aligned} \text{Consider } 6 \cdot 4 &= 7 \cdot 6 - 3 \cdot 4 & [Qa = 6, b = 4] \\ &= 42 - 12 \\ &= 30 \end{aligned}$$

22. (b) We have,

$$\begin{aligned} (30 - 24) &= 6, (35 - 29) = 6, (45 - 39) = 6 \text{ and} \\ (50 - 44) &= 6 \\ \therefore \text{The required number} &= \text{LCM} (30, 35, 45, 50) - 6 \\ &= 3150 - 6 \\ &= 3144 \end{aligned}$$

23. (a) According to the question,

$$\begin{aligned} 0.2x + 600 &= 0.5x \\ \Rightarrow \frac{1}{5}x + 600 &= \frac{1}{2}x \\ \Rightarrow 600 &= \frac{3x}{10} \\ \Rightarrow x &= 2000 \text{ mL} \\ &= 2 \text{ L} & [Q1 \text{ L} = 1000 \text{ mL}] \end{aligned}$$

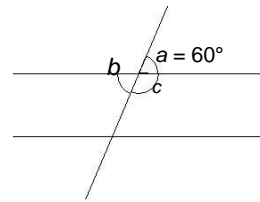
24. (c) Consider $4x + 6z - (x + 3y - 3x) + 5y$

$$\begin{aligned} &= 4x + 6z - x - 3y + 3x + 5y \\ &= 6x + 6z + 2y \\ &= 6 \cdot 2 + 6 \cdot (-2) + 2 \cdot 3 \text{ [put } x = 2, y = 3 \text{ and } z = -2] \\ &= 12 - 12 + 6 \\ &= 6 \end{aligned}$$

25. (b) Let number of books be x .

$$\begin{aligned} \therefore \text{Number of pens} &= x - 5 \\ \text{According to the question,} \\ 4x + 25(x - 5) &= 107 \\ \Rightarrow 4x + 25x - 125 &= 107 \\ \Rightarrow 29x &= 107 + 125 \\ \Rightarrow 29x &= 232 \\ \Rightarrow x &= 8 \end{aligned}$$

26. (a) Given,



We know, $\angle a = \angle b$ [vertically opposite angles]

$$\therefore \angle b = 60^\circ$$

Now, $\angle b + \angle c = 180^\circ$ [linear pair]

$$\begin{aligned} \therefore \angle c &= 180^\circ - \angle b \\ &= 180^\circ - 60^\circ = 120^\circ \end{aligned}$$

27. (c)

28. (c) We know,

$$\begin{aligned} \text{A: } 48 &= 2 \cdot 3 \cdot 8 \\ \text{B: } 15 &= 3 \cdot 5 \cdot 1 \\ \text{K: } 63 &= 3 \cdot 7 \cdot 3 \end{aligned}$$

\therefore The largest number in the cards of Katrina is 9.

29. (c) Time taken by 30 persons to consume 48 kg of rice

$$= 4 \text{ days}$$

Let time taken by 40 persons to consume 240 kg of rice

$$= x \text{ days}$$

We have,

$$\begin{aligned} \frac{30 \cdot 4}{48} &= \frac{40 \cdot x}{240} \\ \Rightarrow \frac{30 \cdot 4 \cdot 240}{48 \cdot 40} &= x \\ \Rightarrow x &= 15 \text{ days} \end{aligned}$$

30. (d) Let number of nailpaints Kareena has be x .

$$\therefore \text{Number of nailpaints given to Mala} = \frac{x+10}{3}$$

$$\text{Remaining number of nailpaints} = \frac{2}{3}x - 10$$

$$\begin{aligned} \text{Number of nailpaints given to Anika} &= \frac{3 \cdot 2}{4 \cdot 3} \\ &= \frac{1}{2}x - \frac{15}{2} - 1 = \frac{1}{2}x - \frac{17}{2} \end{aligned}$$

Remaining number of nailpaints

$$\begin{aligned} &= \frac{2}{3}x - 10 - \left[\frac{1}{2}x - \frac{17}{2} \right] \\ &= \frac{2}{3}x - \frac{1}{2}x - 10 + \frac{17}{2} \\ &= \frac{4x - 3x}{6} - 10 + \frac{17}{2} = \frac{x}{6} - 10 + \frac{17}{2} \end{aligned}$$

$$\text{So, } \frac{1}{6}x - \frac{3}{2} = 30$$

$$\Rightarrow \frac{1}{6}x = \frac{30+3}{2}$$

$$\Rightarrow \frac{1}{6}x = \frac{63}{2}$$

$$\Rightarrow x = \frac{63}{2} \cdot 6$$

$$\Rightarrow x = 63 \cdot 3$$

$$\Rightarrow x = 189$$

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