1. The sum of two integers is 28. If one integer is – 45, find the other.
2. A number changes from – 20 to 30. What is the increase or decrease in the number?
3. Evaluate : 23x 103 + 23x (-3)
4. Find three rational numbers equivalent to

   $(i)\ \frac{3}{5}$ $(ii)\ \frac{4}{-7}$

   $(iii)\ \frac{-5}{9}$ $(iv)\ \frac{8}{-15}$

5. Which of the following are not rational numbers :

   $(i)\ -3$ $(ii)\ 0$

   $(iii)\ \frac{0}{4}$ $(iv)\ \frac{8}{0}$

   $(v)\ \frac{0}{0}$

6. Arrange the given rational numbers in ascending order :

   $\frac{7}{10}, \frac{-11}{-30}$ and $\frac{5}{-15}$

7. Add:

   $\frac{-9}{25}$ and $\frac{1}{-75}$

   $\frac{-9}{-16}$ and $\frac{-11}{8}$

8. The sum of two rational numbers is $\frac{-7}{11}$. If one of them is $\frac{13}{24}$, find the other.

9. Evaluate:

i)

$$\left(\frac{-4}{5}\times\frac{3}{2}\right)+\left(\frac{9}{-5}\times\frac{10}{3}\right)-\left(\frac{-3}{2}\times\frac{-1}{4}\right)$$

ii)

$$\left(\frac{-35}{39}\times\frac{-13}{7}\right)-\left(\frac{7}{90}\times\frac{-18}{14}\right)$$

10. Insert one fraction between :

$\frac{9}{17}$ and $\frac{6}{13}$

11. A motor cycle runs $31\frac{1}{4}$ km consuming 1 litre of petrol. How much distance will it run consuming $1\frac{3}{5}$ liter of petrol?

12. Evaluate:

(i) (7.5 x 40.4) ÷ 25
(ii) 2.1 ÷ (0.1 x 0.1)

13. Convert into vulgar fraction :
(i) $1.\overline{28}$
(ii) $5.2\overline{34}$

14. Write the number of significant figures (digits) in:
(i) 0 4.2 x 0.6
(ii) 0.08 x 25
(iii) 3.6 ÷ 0.12 .

15. Evaluate:
(i) $5^4 \div 5^3 \times 5^5$
(ii) $4^4 \div 4^3 \times 4^0$
(iii) $(3^5 \times 4^7 \times 5^8)^0$

16. Simplify and express the answer in the positive exponent form:

$$\frac{a^{-7} \times b^{-7} \times c^{5} \times d^{4}}{a^{3} \times b^{-5} \times c^{-3} \times d^{8}}$$

17. Classify the following as monomial , binomial, trinomial

(i) $2x \div 15$
(ii) $ax + 9$
(iii) $3x^2 \times 5x$

18. Write the coefficient of:
(i) mn in -mn
(ii) 15 in $-15p^2$

19.Write the degree of each of the following polynomials :
(i) $3y^3 - x^2y^2 + 4x$
(ii) $p^3q^2 - 6p^2q^5 + p^4q^4$

20.Add:

$4x^3 + 2x^2 - x + 1$, $2x^3 - 5x^2 - 3x + 6$, $x^2 + 8$ and $5x^3 - 7x$

21.Subtract:

$6m^3 + 4m^2 + 7m - 3$ from $3m^3 + 4$

22.Multiply:

(i) $(c + 5)(c - 3)$ (ii) $(3c - 5d)(4c - 6d)$

23. Divide :

$9x^2 - 24xy + 16y^2$ by $3x - 4y$

$15x^2 + 31xy + 14y^2$ by $5x + 7y$

24. Question 6.

$$y + \frac{y}{2} = \frac{7}{4} - \frac{y}{4}$$

25.

The sum of two numbers is 18. If one is twice the other, find the numbers.

26. Express each of the following sets in set- builder notation (form), Roster , Description form:

(i) {3, 6, 9, 12, 15}

(ii) {2, 3, 5, 7, 11, 13 …. }

(iii) {1, 4, 9, 16, 25, 36}

(iv) {0, 2, 4, 6, 8, 10, 12, …. }

(v) {Monday, Tuesday, Wednesday}

(vi) {23, 25, 27, 29, … }

27. Write the cardinal number of each of the following sets:

(i) A = {x : x is a perfect square number, x ∈N and x ≤ 30}.

28. For the set, given below, state whether it is finite set, infinite set or the null set :

(i) {even numbers not divisible by 2}.

(ii) {squares of natural numbers}.

(iii) {coins used in India}

(iv) C = {x | x is a prime number between 7 and 10}.

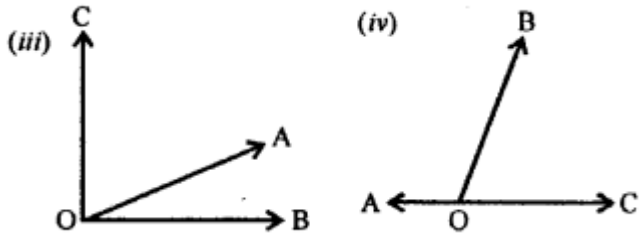
29. If P = {x : x is a factor of 12} and Q = {x: x is a factor of 16}, find :

(i) n(P)

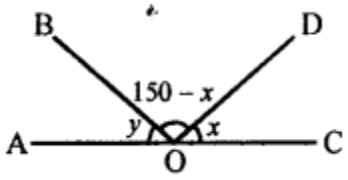
(ii) n(Q)

(iii) Q – P and n(Q – P)

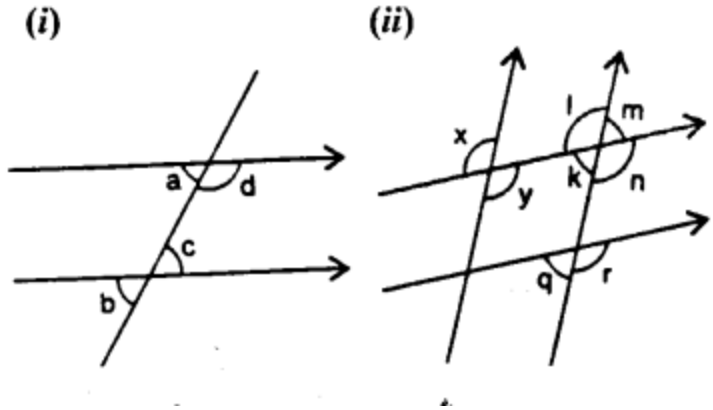
30. In which of the following figures, are ∠AOB and ∠AOC adjacent angles? Give, in each case, reason for your answer.



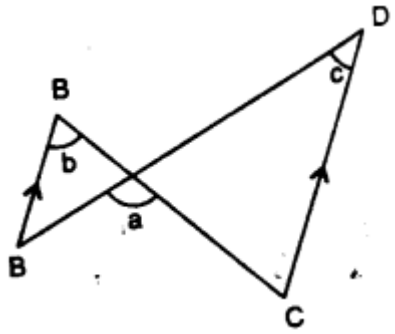
31. Find y in the given figure.



32. In the given figures, the arrows indicate parallel lines. State which angles are equal. Give reasons.

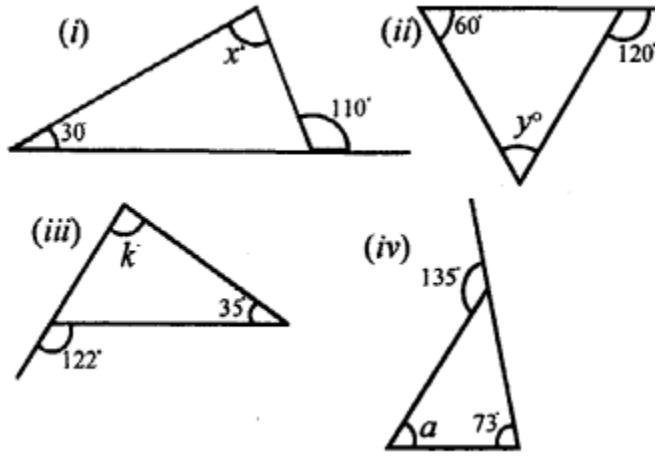


33. In the given figure, show that: ∠a = ∠b + ∠c



34. One angle of a triangle is 61° and the other two angles are in the ratio $1\frac{1}{2} : 1\frac{1}{3}$. Find these angles.

35. Find the unknown marked angles in the given figures :



36. Find the unknown angles in the given figures: