Name: _____   Date :
Class: 7   Div: _____   Subject: Math
Prepared By: Ms. Snehal Devake   Ch 2, 5 and Ch 8 to Ch 13

Q.1) Simplify:

a) $\frac{-5}{9}$ x $\frac{2}{5}$ x $\frac{-9}{8}$ b) $\frac{1}{7}$ + $\frac{5}{14}$ c) $\frac{2}{3}$ + $\frac{5}{4}$ + $\frac{7}{12}$ d) $\frac{-18}{27}$ ÷ $\frac{-15}{9}$

e) $\frac{-4}{5}$ ÷ (-3) f) $5\frac{2}{5}$ - $(\frac{3}{5})$ g) $\frac{-14}{15}$ + $(\frac{-3}{5})$ h) $\frac{-4}{3}$ - $\frac{6}{7}$

i) $\frac{5}{7}$ x $\frac{7}{6}$ j) $\frac{-4}{5}$ + $(\frac{-7}{10})$

Q.2) Give four rational numbers equivalent to:

a) $\frac{-2}{7}$ b) $\frac{3}{-5}$ c) $\frac{4}{9}$

Q.3) Draw the number line and represent the following rational numbers on it:

a) $\frac{7}{6}$ b) $\frac{-5}{8}$ c) $\frac{5}{3}$

Q.4) Rewrite the following rational numbers in the simplest form:

a) $\frac{19}{57}$ b) $\frac{-36}{99}$ c) $\frac{15}{45}$

Q.5) Fill in the boxes with the correct symbol out of >, <, and =.

a) $\frac{7}{4}$ ☐ $\frac{13}{4}$ b) $\frac{3}{7}$ ☐ $\frac{3}{9}$

Q.6) Write four more rational numbers in each of the following patterns:

a) $\frac{5}{9}$, $\frac{10}{18}$, $\frac{15}{27}$, $\frac{20}{36}$ b) $\frac{-4}{6}$, $\frac{-8}{12}$, $\frac{-12}{18}$, $\frac{-16}{24}$

Q.7) Find the missing values.

a) Base = 42 cm, Height = ? , Area of parallelogram = 204 cm ²

b) Base = ?, Height = 6.2 mm, Area of triangle = 559 mm²

c) Base = 12 cm, Height = 8 , Area of parallelogram = ?

d) Base = 7.9 mm, Height = 6.2 mm, Area of triangle = ?

Q.8) Find the circumference of the circle with the following radius. (Take $\pi = \frac{22}{7}$)

a) 62 mm   b) 18 cm

Q. 9) ΔABC is right-angled at A. AD is perpendicular to BC. If AB = 8 cm, BC = 10 cm, and AC = 5 cm, find the area of ΔABC. Also, find the length of AD.

Q.10) A gardener wants to fence a circular garden of diameter 30m. Find the length of the rope he needs to purchase, if he makes 2 rounds of the fence. Find the cost of the rope, if it costs ₹ 5 per meter. (Take $\pi = \frac{22}{7}$)

Q.11) Find the area of the following circles, given that.

a) Radius = 42 mm, $\pi = \frac{22}{7}$ b) Diameter = 75 m, $\pi = \frac{22}{7}$

Q.12) Classify into monomials, binomials and trinomials.

    a) 3y – z   b) - 6 q   c) 5x + 7y – xy

    d) 4p + 9q   e) 4x² - 2y² + xy   f) 10 t

Q.13) Identify the terms and their factors in the following expressions. Show the terms and factors by tree diagrams.

    a) 6x – 3   b) 8 + 5x + x ²   c) 7y – y

Q.14) State whether a given pair of terms is of like or unlike terms.

    a) -5, 400   b) $-5x, \frac{4}{7}x$ c) $-30x,\ 3y$

    d) 17 xy, 6 yx   e) 9m²p, 9mp²

Q.15) Simplify these expressions and find their values if a = 3, b = – 2.

    a) 4a + 5 – 7a + 3   b) 15 – 3b – 7 – 7b

    c) 2a + 2b – 14 – 5 + a

Q.16) Simplify the expression 6 (a²+ ab) - 8 + 4 ab **and find its value when a = 4, b = – 3.**

Q.17) If a = 5, b = – 2, find the value of:

    a) 6a ² b + 2ab ² + ab   b) 2a - 5b   c) $\frac{3\,a}{4} - 2b + 5$

    d) 5a² – b²   e) 7a – 3b + 7 – 5 + a

Q.18) What should be the value of a if the value of 6x²+ 3x – a **equals to 8, when x = 0?**

Q.19) Simplify the expressions and find the value if x is equal to 3.

    a) x + 3 + 8 (x – 3)   b) 3 (x - 2) + 7x – 9

    c) 4x + 6 (x – 5)   d) 7 (2x – 1) + 2x + 25

Q.20) Simplify:

    a) $(3)³ \times (-5)^2$ b) $(-4)⁴$ c) 4×30^2

    d) $2^3 \times 2^2$ e) $\frac{30 \times\ 5^4 \times\ 16}{5^3 \times\ 32}$ f) $\frac{(2^4) \times\ 5^4 \times\ 2}{4 \times\ 25}$

Q.21) Using laws of exponents, simplify and write the answer in exponential form.

    a) $6^3\ \times\ 4^4$ b) $(3^2)^3 \div 3^3$ c) $7^{10} \div 7^3$

    d) $4^3 \times 4^1 \times 4^3$ e) $(5^{15} \div 5^{12}) \times 5^6$

Q.22) Express each of the following as a product of prime factors only in exponential form.

    a) 204 x 196   b) 385   c) 629 x 76

Q.23) Simplify and express each of the following in exponential form.

    a) $\frac{2^3 \times\ 3^4 \times\ 4}{3^3 \times\ 30}$ b) $((3^4)^3 \times 3^2) \div 3^7$ c) $\frac{6^4}{2^3 \times\ 2^4}$

    d) $(4^0 + 8^0) \times 4^0$ e) $(\frac{a^4}{a^3}) \times a^4$

Q.24) Write the following numbers in the expanded form.

    a) 7609502   b) 67308123

Q.25) Find the number from each of the following expanded forms.

a) $(6 \times 10)^4 + (7 \times 10)^3 + (8 \times 10)^2 + (2 \times 10)^1 + (3 \times 10)^0$

b) $(7 \times 10)^5 + (9 \times 10)^1 + (5 \times 10)^0$

Q.26) Express the following numbers in standard form.

a) 7,94,80,000   b) 5,36,00,00,000

c) 8,46,02,015   d) 4572.35

Q.27) Which of the following figures have rational symmetry of order more than 1?

a)   b)

Q.28) Draw three figures whose line of symmetry is more than 3.

Q.29) Can we have the rotational symmetry of order more than 1 whose angle of rotation is: a) 60^0 b) 72^0

Q.30) Write the number of lines of symmetry for the following figure.

a) An isosceles triangle   b) A quadrilateral   c) A circle

d) A rhombus   e) An equilateral triangle   f) A square

Q.31) Draw the net for the following figures:

a) Cone   b) Cube   c) Cuboid   d) Pyramid   e) Cylinder

Q.32) Draw an oblique sketch and an isometric sketch for the following.

a) A cuboid of dimensions 6cm, 3cm, 2cm

b) A cube with an edge 5 cm long

Q.33) What cross-sections do you get when you give a Vertical cut and Horizontal cut to the following solids?

a) A circular pipe   b) Birthday cap   c) A die

Q.34) Complete the following table:

Name	Faces	Vertices	Edges
Cube			
Cylinder			
Cuboid			
Sphere			
Triangular prism			
Cone			
Square pyramid			
Triangular pyramid			
Rectangular pyramid			

Q.35) Find:

  a) $\frac{3}{2}$ of $4\frac{2}{9}$ b) 2.4 x 0.6 c) 100.01 x 1.5

  d) $\frac{6}{7} \div 2$ e) $3\frac{4}{7} \div 5$ f) $\frac{3}{4}$ x $6\frac{4}{6}$

  g) $2\frac{3}{8} \div \frac{6}{5}$ h) $4.6 \div 10$ i) $0.67 \div 1000$

Q.36) Which is greater: $\frac{1}{3}$ of $\frac{3}{4}$ or $\frac{2}{3}$ of $\frac{3}{5}$

Q.37) Multiply and reduce to lowest form and convert into a mixed fraction:

  (i) $11 \times \frac{3}{5}$ (ii) $6 \times \frac{1}{3}$ (iii) $8 \times \frac{6}{7}$

Q.38) Find the complement of each of the following angles.

  a) 55° b) 67° c) 30° d) 43°

Q.39) Find the supplement of each of the following angles.

  a) 65° b) 51° c) 105° d) 113°

Q.40) Find the value of y in each of the following figure if a ll b.
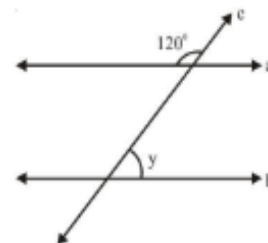
Q.41) In the following figure name the following pairs of angles:
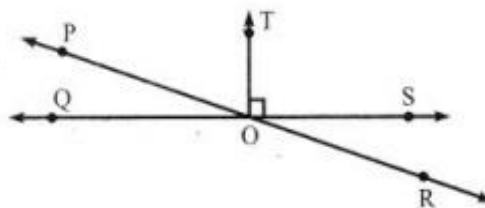
  a) Obtuse vertically opposite angles.
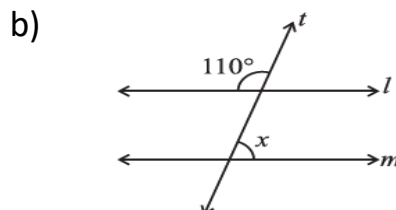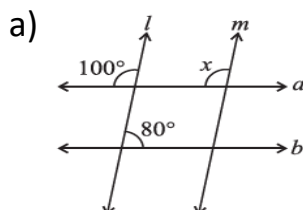
  b) Adjacent complement angles.

  c) Equal supplementary angles.

  d) Unequal supplementary angles.

  e) Adjacent angles that do not form a linear pair.

Q.42) Find the value of x in each of the following figures if l ‖ m.

  a) b)

Q.43) In the given figures below, decide whether l is parallel to m.