MRA DAV Public School Solan

Holiday Home Work: Mathematics
Class – VIII (promoted to IX)

1 Find whether or not the first polynomial is a factor of second:

(i) $-3 + 2x$, $6x^3 - x^2 - 10x - 3$

(ii) $3x^2 + 5$, $10x + 6x^5 - x^4 + 4x^3 - 5x^2 - x$

2 Write the degree of remainder, when $-6x^4 + 5x^2 + 11x + 1$ is divided by $2x^2+1$.

3 Find the value of a, if $y - 2$ is a factor of $y^3 - 4y^2 + y + a$.

4 Find the value of m and n so that $y^2 + 1$ is factor of $y^4 + y^3 + 8y^2 + my + n$.

5 Using division, find whether or not the polynomial $2y^2 - 6$ is a factor of the polynomial $6y^5 - 28y^3 + 3y^2 + 30y - 9$.

6 Reduce $(x - 5)(6x^3 - x^2 + 1) + (x + 1)(2x^2 - 9x - 5)$ to a polynomial in standard form. Check whether $(2x + 1)$ is a factor of the above polynomial, using division.

7 Three numbers are in the ratio 4 : 5 : 6. If the sum of the largest and smallest exceeds the third number by 55. Find the numbers.

8 The sum of the digits of a two digit number is 15. If the number formed by reversing the digits is less than the original number by 27, find the original number.

9 A box contains 19 cards bearing numbers 1, 2, 3... 19. A card is drawn at random from the box. Find the probability that the number on the card is
(i) a perfect square number
(ii) an even number
(iii) a number divisible by 3
(iv) a composite number

10 If $3^y + 3^{y+1} = 108$, find the value of y.

11 Solve the equation: $\frac{(x+2)(2x-3)-2x^2+6}{x-5} = 2$

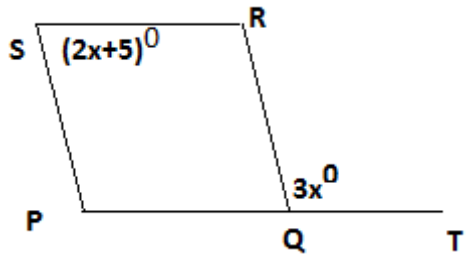
12 The measure of two adjacent angles of a parallelogram are in ratio 2 : 3. Find the angles of the parallelogram.

13 One side of a parallelogram is 3/4 times its, adjacent side. If the perimeter of the parallelogram is 70 cm, find the sides of the parallelogram.

14 Simplify: $\dfrac{5^{-2} \times 3^{-3} \times (125)^{\frac{2}{3}}}{(27)^{\frac{-2}{3}} \times (32)^{\frac{-1}{5}}}$

15 Divide $(-1+x^4)$ by $(-1+x)$

16 In the given parallelogram PQRS, $\angle S = (2x + 5)°$ and $\angle RQT = (3x)°$, find the interior angles of the parallelogram PQRS.



17 Write factors of algebraic expression: $x^2 + (a - b)x - ab$

18 If $(a - b + c)^2 = a^2 + b^2 + c^2 + k\,ab - 2bc + 2ac$, write the value of k.

19 If $5x + 6y = 13$, $xy = 2$, then find the value of $25x^2 + 36y^2$.

20 Simplify : (i) $(3x+4y)^2 + (3x-4y)^2$

(ii) $(p^2+3q^2)^2 - (p^2-3q^2)^2$

21 Find the product using suitable identity:

(i) $\left(a - \frac{b}{2} + 1\right)\left(a - \frac{b}{2} + 1\right)$

(ii) $\left(y^2 - \frac{1}{5}\right)\left(y^2 + \frac{7}{10}\right)$

(iii) $\left(p - \frac{1}{q}\right)\left(p + \frac{1}{q}\right)\left(p^2 + \frac{1}{q^2}\right)\left(p^4 + \frac{1}{q^4}\right)$

(iv) $(z^2 - 5)(z^2 + 8)$

22 Evaluate the following using suitable identity:

(i) $(107)^2$ (ii) 10.1×9.9 (iii) $203^2 - 195^2$

(iv) $\dfrac{15\times15 - 2\times15\times11 + 11\times11}{15\times15 - 11\times11}$

(v) $\dfrac{0.7\times0.7-0.3\times0.3}{0.7\times0.7+2\times0.7\times0.3+0.3\times0.3}$

23 Factorise: (i) x^2-5x+6 (ii) a^4b-16b^3

(iii) p^2-q^2-1+2q (iv) $z^2+6z-16$

(v) $x^4+4y^4+1-4x^2y^2+4y^2-2x^2y^2$

(vi) $p^2+\left(\dfrac{q}{4}\right)^2+25+pq-5q-10p$

(vii) $25m^2+10m+1-36n^2$

24 If $y+\frac{1}{y}=4$, find the value of $y^2+\frac{1}{y^2}$ and $y^4+\frac{1}{y^4}$.

25 Find the value of x, if $4x = (52)^2 - (48)^2$

26 If $5x-2y=7$ and $xy = 2$, find the value of $(5x+2y)^2$

27 If $a^2+\frac{1}{a^2}=51$, find the value of $a-\frac{1}{a}$

28 If $(3p - 2q) = 5$, $pq = 4$, find the value of $(3p + 2q)$.

29 The surface area of the three coterminous faces of a cuboid are 6, 15, 10 sq.cm respectively. Find the volume of the cuboid.

30 A 5 cm cube is cut into as many 1 cm cubes as possible. What is the ratio of the surface area of the larger cube to that of the sum of the surface areas of the smaller cubes?

31 The plastic paint in a Asian paint container is sufficient to paint an area equal to $93.75m^2$ How many blocks of dimensions 22.5 cm × 10 cm × 7.5 cm can be painted out of this container

32 Sita had to make a model of cylindrical kaleidoscope for her science project. She wanted to use black chart paper to make the curved surface of the kaleidoscope. What would be the area of chart paper required by her, if she wanted to make a kaleidoscope of length 30cm with a 2.7 cm radius?

33 A box is made entirely of glass panes (including base) held together with tape. It is 3 cm long, 2.5 cm wide and 2.5 cm high. How much of tape is needed for all the 12 edges?

34 The length, breadth and height of a room are 12 m, 10 m, and 9m respectively. Find the area of four walls and ceiling of room?

Holiday Home Work: English
Class – VIII (promoted to IX)

1. Read the famous book 'A Tale of Two Cities' by Charles Dickens

- Write a short summary of the story (75 words)
- Name the main characters and write their character sketch.
- Choose 10 interesting adjectives and 10 adverbs from the book and find their dictionary meanings.
- Find one synonym and one antonym for all the 20 words.

2. Make a poster on any of the following topics:

a) Donate blood
b) Keep the earth green
c) Save water
d) Save girl child

3. Make a beautiful bookmark for your Literature reader. Decorate it and write a famous quotation by a well know poet or author.

4. Make an author display card

a) Use an A4 size pastel sheet of green, yellow or light blue colour.

b) Paste the picture of any one of the following authors- Rabindra Nath Tagore, RuskinBond, O Henry and William Shakespeare. Below it provide the following information about the author:

- Date of birth
- Popular works
- Awards received