

## Mathematical Aptitude

# Linear Equation In One Variable

### Application Based Questions

#### Q.1. Multiple choice questions:

**Directions:** Read the following questions and choose the answer that best answer the questions.

1. Solution of  $6.75x - 11.25 = 9x + 0.375$ , is  
(a)  $-5\frac{1}{6}$                       (b)  $-6\frac{1}{5}$                       (c)  $5\frac{1}{6}$                       (d)  $6\frac{1}{5}$
2. The sum of two natural numbers is 20. If one number is one-fourth of the other, then the numbers are,  
(a) 10, 10                      (b) 15, 5                      (c) 18, 2                      (d) 16, 4
3. If we divide 160 into two parts such that second part is 12 more than the thrice of the first part, then the two parts are  
(a) 73, 321                      (b) 37, 321                      (c) 37, 123                      (d) 73, 123
4. The base of an isosceles triangle is  $\frac{5}{3}$  cm. The perimeter of the triangle is  $4\frac{2}{15}$  cm. The length of either of the remaining equal sides, is  
(a)  $\frac{30}{37}$                       (b)  $\frac{73}{30}$                       (c)  $\frac{37}{30}$                       (d)  $\frac{112}{90}$
5. The angles of a triangle are  $x^\circ$ ,  $x + 15^\circ$  and  $2x - 15^\circ$ . The smallest angle of the triangle is  
(a)  $60^\circ$                       (b)  $75^\circ$                       (c)  $45^\circ$                       (d)  $15^\circ$

**Q.2. Subjective questions:**

1. The denominator of a rational number is greater than its numerator by 7. If the numerator is increased by 16 and the denominator is decreased by 1, the number obtained is  $\frac{3}{2}$ . Find the rational number.

**Ans.** .....  
.....  
.....

2. Solve:  $\frac{3(5x+1)}{8} - \frac{2(3x+5)}{6} = \frac{5x}{4} + 3\frac{1}{3}$ .

**Ans.** .....  
.....  
.....

3. A number  $p$  is equal to the square of a number  $q$  plus thrice a number  $r$ .

- (i) Find a formula for  $p$  in terms of  $q$  and  $r$ .  
(ii) Make  $r$  the subject of the formula.  
(iii) Find  $r$  when  $p = 10$  and  $q = 3$ .

**Ans.** .....  
.....  
.....

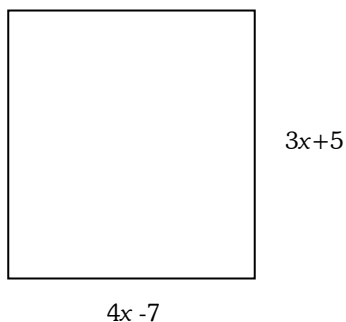
4. You have given a formula in term of  $y$  and  $t$  which is  $z = \frac{1}{2}y - 3t$ . Make  $y$  the subject of the formula. Find  $y$ , when  $z = 4$  and  $t = -3$ .

**Ans.** .....  
.....  
.....

5. How many kilos of tea worth ₹ 27 per kg should be mixed with 10 kg of tea worth ₹ 5 per kg to produce a mixture which will cost ₹ 17 per kg?

**Ans.** .....  
.....  
.....

6. You have given a square. Find the value of  $x$  and also the length of the side of the square.



**Ans.** .....  
.....  
.....

7. Four quantities  $x$ ,  $u$ ,  $v$  and  $t$  are related by the formula  $s = \frac{1}{2}(u + v)t$

Find the values of  $v$  given that  $u = 10$ ,  $s = 15$  and  $t = 3$ .

**Ans.** .....  
.....  
.....