**Numeric Entry Practice Test 1**

**Question 1**

**The denominator of a fraction is 4 less than the numerator. If the denominator is decreased by 2 and the numerator is increased by 1, then the numerator is eight times the denominator. Find the numerator of the fraction.**

**Correct Answer: 7**

**Explanation:**

Let the fraction be x/y  
According to the conditions  
y = x - 4   
x - y = 4 ...(1)  
8\*(y-2) = (x+1)  
8y-16=x+1  
x-8y = -17...(2)  
Subtracting (1) from (2), we get  
x - 8y - x + y = -17 - 4  
-7y = 21  
y = 3  
x = 4 + y = 4+ 3 = 7  
The numerator is 7

**Question 2**

**A father is four times as old as his son is. Five years back he was seven times as old as his son was then. What is the present age of the father?**

**Correct Answer: 40 years**

**Explanation:**

Let the age of the son and father be x and y respectively.  
5 years back, their ages were (x-5) and (y-5)  
According to the given conditions  
4x = y  
4x-y = 0 ...(1)  
  
7(x-5) = (y-5)  
7x - 35 = y -5  
7x -y = 30 ...(2)  
Subtracting (1) from (2), we get  
7x - y - 4x + y = 30 - 0  
3x = 30  
x = 10 years  
y = 4\*10 = 40 years  
The present age of the father is 40 years.

**Question 3**

**Find a number whose 20% is 35% of 144.**

**Correct Answer: 252**

**Explanation:**

Let the number be x.  
20% of x = 35% of 144  
= 35\*144/100 = 50.4  
20% of x = 50.4  
20x/100 = 50.4  
x = 50.4\*100/20 = 252  
The required number is 252

**Question 4**

**Find the positive value of x, for which AB = 5 units for points A(3,x/2) and B(-1,x+1).**

**Correct Answer: 4**

**Explanation:**

AB = 5  
AB = sqrt[(-1-3)2+(x+1-x/2)2]  
5= sqrt[(-4)2+(x/2+1)2]  
Squaring both sides, we get  
25 = 16 + x2/4+1+x  
x2/4 + x -8=0  
x2+4x-32=0  
x2+8x-4x-32=0  
x(x+8)-4(x+8)=0  
(x-4)(x+8)=0  
x = 4  
  
[x2 = x\*x]

**Question 5**

**When two lines are parallel, what is the difference of their slopes equal to?**

**Correct Answer: 0**

**Explanation:**

When two lines are parallel, their slopes are equal.  
The differene of their slopes is equal to 0.

**Question 6**

**Find the distance of the mid-point of the line joining L(5,1) and M(-1,-1) from the point O(2,0).**

**Correct Answer: 0**

**Explanation:**

Mid point of LM is given by  
((5-1)/2, (1-1)/2) = (4/2,0/2)   
=(2,0)  
The distance of (2,0) from O(2,0) is equal to 0.

**Question 7**

**For what value of k is the line (k-3)x-(4-k2)y+k2-7k+6=0 parallel to the x axis?  
  
[k2=k\*k]**

**Correct Answer: 3**

**Explanation:**

For the line to be parallel to the x axis, its slope is 0  
Slope = - coefficient of x/coefficient of y  
= -(k-3)/(4-k2) = 0  
Hence, k-3=0  
k=3  
For k=3, the given line is parallel to the x axis.

**Question 8**

**Find the radius of the circle x2+y2-12x+11=0  
  
[x2=x\*x]**

**Correct Answer: 5**

**Explanation:**

x2+y2-12x+11=0   
(x2-12x)+y2+11=0  
(x-6)2+(y+0)2 -36 +11 = 0  
(x-6)2+(y+0)2 = 36-11=25  
(x-6)2+(y+0)2 = 52  
The radius of the circle is 5 units.

**Question 9**

**The sum of three numbers is 132. The first number is twice the second and the third number is one-third of the first. Find the first number.**

**Correct Answer: 72**

**Explanation:**

Let the second number be 3x.  
The first number will be 2\*3x = 6x  
The third number will be 1/3\*6x = 2x  
6x+3x+2x = 132  
11x=132  
x = 132/11 = 12  
The first number will be 6x = 6\*12 = 72

**Question 10**

**Find the value of [27(2/3)]/[64(-4/3)].  
  
[272=27\*27]**

**Correct Answer:**

**Explanation:**

[27(2/3)]/[64(-4/3)]  
= [(33)(2/3)]/[(43)(-4/3)]  
= [3(3\*2/3)]\*[4(3\*4/3)]  
= (32)\*(44)  
= 9\*256 = 2304

**Question 11**

**Three-fourth of a number is 150 greater than three-fourteenth of the number. Find the number.**

**Correct Answer: 280**

**Explanation:**

Let the number be x.  
According to the conditions,  
3x/4 -150 = 3x/14  
x/4 - 50 = x/14  
x\*14 - 50\*4\*14 = x\*4  
14x - 2800 = 4x  
10x = 2800  
x = 280

**Question 12**

**If a/(a+b) = 17/23, then fill in the blank  
  
(a+b)/(a-b) = -------/11**

**Correct Answer: 23**

**Explanation:**

a/(a+b) = 17/23  
Hence, when a+b = 23, a = 17  
Thus, b = 23 - a = 23 - 17 = 6  
(a+b)/(a-b) = (17+6)/(17-6)  
= 23/11  
Hence, the number to be filled in the blank is 23.

**Question 13**

**5 men can complete a work in 2 days, 4 women can complete it in 3 days and 5 children can complete it in 3 days. In how many days can 1 man, 1 woman and 1 child complete it working together?**

**Correct Answer: 4 days**

**Explanation:**

Work done by one man in 2 days = 1/5  
Work done by one man in one day = 1/(5\*2) = 1/10  
Work done by one woman in one day = 1/(4\*3) = 1/12  
Work done by one child in one day = 1/(5\*3) = 1/15  
Work done by one man, one child and one woman in one day = 1/10+1/12+1/15  
= (6+5+4)/(5\*2\*2\*3 )  
=15/(15\*4) = 1/4  
They will take 4 days to complete the work.

**Question 14**

**In a kilometer race A can give B a start of 50 meters and B can give C a start of 40 meters. A start of how many meters can A give C in a 2 km race?**

**Correct Answer: 176m**

**Explanation:**

When A completes 1000 meters, B covers 950 meters.  
When B completes 1000 meters, C covers 960 meters.  
Distance covered by A/ distance covered by B = 1000/950  
Distance covered by B/distance covered by C = 1000/960  
Distance covered by A = 1000/950 \* distance covered by B  
= 1000/960 \* 1000/950\*distance covered by C  
Distance covered by C, when A covers 2 km = (950\*960)/(1000\*1000)\*2000  
= 1824 metres  
  
A gives C a start of 2000-1824 = 176 meters

**Question 15**

**On what sum is the difference in compound interest and simple interest for 3 years at 5% per annum Rs.61?**

**Correct Answer: Rs.8000**

**Explanation:**

Let CI and SI be the compound interest and simple interest.  
Let P, R, T be the principle, rate and time.  
SI = P\*R\*T/100 = P\*3\*5/100 = 15P/100  
CI = P[(1+R/100)T-1]  
= P[(1+5/100)3-1]  
  
CI-SI = 61  
P[(21/20)3-1] - 15P/100 = 61  
P[9261/8000 -1 -3/20] = 61  
P[(9261-8000-1200)/8000 = 61  
P = 61\*8000/(61) = 8000  
The sum invested was Rs.8000  
  
[100T=100\*100\*...T times]