1. How many kgs of wheat costing Rs.24/- per kg must be mixed with 30 kgs of wheat costing Rs.18.40/- per kg so that 15% profit can be obtained by selling the mixture at Rs.23/- per kg?
2. 10 c. 12
3. 11 d. 13

C.P of cheaper unit C.P of dearer Unit

Mean Price

Dearer-Mean Mean-Cheaper

C.P of 1st type = 24

C.P of 2nd type =18.40

Profit = 15%

S.P = 23

C.P of mixture = (s.p\*100)/(100+profit%)

115 23 -s.P

100 X -C.P

X=23\*100/115

X=20

C.p of mixture = 20

18.40 24

20

24-20 20-18.40

C.P of 2nd type:C.P of 1st type = 4:1.60=

1st type:2nd type=1.60:4

1.60:4=x:30

1.60/4=x/30

X=12kg

2) A vendor bought 6 fruits for a rupee. How many for a rupee must he sell to gain 20%?

a. 3 b. 4 c. 5 d. 6

C.P of 6 fruits = Rs.1

S.P of 6 fruits = ?

120 x – S.P

100 1 – C.P

X=120/100=6/5

6/5 6

1. X

X=5

3) In what ratio must a grocer mix two varieties of pulses costing Rs.17 and Rs. 25 per kg respectively so as to get a mixture worth Rs.18.50 kg?

a. 3:14 b. 13:3 c. 15:3 d. 1:3

17 25

18.50

25-18.50 : 18.50-17

6.5:1.5

6.5/1.5=>65/15=13/3

4) In selling an article for Rs.86 there is a gain of 54%. The gain by selling that for Rs.84 is(approx)

a. 55% b. 50% c. 48% d. 46%

S.P=86 Profit=54%

C.P

154 86 – s.P

100 x

X=55.8

S.P=84 C.P=55.8

X 84

100 55.8

X=150=from 100+50=50%

5) In a sale, a perfume is available at a discount of 20% on the selling price. If the perfume’s discounted selling price is Rs.3675.40, what was the original selling price of the perfume (in RS.)?

a. 4324 b. 4386.45 c. 4594.25 d. None

100%

20%=80%

O.S.P = x

100 – 20%

80% of x = 3675.40

X=3675.40\*100/80

X=4594.25

6) A man sold two steel woods for Rs. 600 each. On one, he gains 25% and on other, he loses 14%. How much does he gain or lose in the whole transaction?

a. 1.86% gain b. 2% gain c. 1.86% loss d. 2% loss

S.P of two woods = 600+600=1200

S.p of 1st wood = 600

Profit = 25%

C.P of 1st wood=?

125 600

100 X

C.P = (600\*100)/125=480

S.P of 2nd wood=600

Loses = 14%

86 600

100 X

C.P of 2nd wood = 697.5

C.P of two woods = 480+697.5=1177.6

S.p of two woods = 1200

Gain%= profit\*100/c.p

(22.4\*100)/1177.6=1.86%

7) By mixing two qualities of pulses in the ratio 2: 3 and selling the mixture at the rate of Rs 22 per kilogram, a shopkeeper makes a profit of 10 %. If the cost of the smaller quantity be Rs 14 per kg, the cost per kg of the larger quantity is:

A.Rs 23 B.Rs 25 C.Rs 24 D.None of these

Ratio = 2:3

S.P = 22

Profit = 10%

C.P of mixture

110 22

100 x

C.P=20

14 24

20

4 : 6

2 : 3

8) If books bought at prices ranging from Rs. 200 to Rs. 350 are sold at prices ranging from Rs. 300 to Rs. 425, what is the greatest possible profit that might be made in selling eight books?

A.600 B.1200 C.1800 D.none of these

C.P = 200

S.P = 425

Profit = S.P – C.P = 425-200=225\*8=1800

10) Bhajan Singh purchased 120 reams of paper at Rs 80 per ream. He spent Rs 280 on transportation, paid octroi at the rate of 40 paise per ream and paid Rs 72 to the coolie. If he wants to have a gain of 8 %, what must be the selling price per ream?

A.90 B.89 C.87.48 D.86

Total Investment = 120reams

1ream 80

120reams x

120reams = 80\*120=9600.Rs

(9600+280+(40/100)\*120+72)=10000

108 x

100 10000

X=10800 for 120 reams

1ream = 10800/120 = 90

Area, Shapes and Perimeter

An error 2% in excess is made while measuring the side of a square. The percentage of error in the calculated area of the square is:

A.1.04 B.2.04 C.3.04 D.4.04

% Error = ((Estimated – Actual)/Actual)\*100

100cm

100\*2/100-2=>100+2=102cm

Area of square = a^2 = (100)^2

Area of square = A^2=(102)^2

Error = (102)^2-(100)^2=(102+100)(102-100)

=202\*2=404

%error = (404/100\*100)\*100

The length of a rectangle is twice its breadth. If its length is decreased by 5 cm and breadth is increased by 5 cm, the area of the rectangle is increased by 75 sq. cm. Find the length of the rectangle.

A.10 cm B.15 cm C.20 cm D.18 cm

Breadth = B

Length = 2B

Area of rectangle = L\*B=2B\*B=2B^2

L = 2B-5

B=B+5

Area of rectangle = L \* B

2B^2+75 = (2B-5)\*(B+5)

2B^2+75=2B^2+10B-25-5B

5B=100

B=20

B=20

L = 20\*2=40cm

The sector of a circle has the radius of 21 cm and central angle 135degree. Find its perimeter?

A.91.5 cm

B.93.5 cm

C.94.5 cm D.92.5 cm

Perimeter of sector = length of an arc + 2R

Length of an arc = theta/360 \* 2\*PI\*R

(135/360\*2\*(22/7)\*21) + 2\*21 = 91.5

Area of sector = theta/360\*PI\*R^2

A plot has a concrete path within its borders on all sides having the uniform width of 4m. The plot is rectangular with sides 20m and 15m. The charge of removing concrete is Rs. 6 per sq.m. How much is spent in removing all the concrete?

A.Rs. 1548 B.Rs. 1296 C.Rs. 1500 D.Rs. 1083

20m

15m

Concrete area = Total area – Non concrete area

Total area

Area of rectangle

L=20m

B=15m

Non Concrete area

Length = 20 – 4 – 4= 12

Breadth = 15-4-4=7

Concrete area = Total area-Non concrete area

=(20\*15)-(12\*7)=300-84=216

1sq.m = 6

216sq.m = x

X=216\*6=1296rs

A tree breaks and falls to the ground such that its upper part is still partially attached to its stem. At what height did it break, if the original height of the tree was 24 cm and it makes an angle of 30° with the ground?

A.12 cm B.8 cm C.9.5 cm D.7.5 cm

24cm

P

H

Q 30 R

Sin theta = Opp/hyp

Sin 30 = h/24-h

½ = h/24-h

24-h=2h

24=3h

H=8cm

The barrel of a fountain pen is cylindrical in shape which radius of the base as 0.7 cm and is 5 cm long. One such barrel in the pen can be used to write 300 words. A barrel full of ink which has a capacity of 14 cu cm can be used to write how many words approximately?

A.598 B.656 C.508 D.545 E.687

Radius = 0.7 cm

Height = 5cm

Volume of barrel = PI\*r^2\*h = 22/7\*0.7\*0.7\*5= 7.7cu.cm

7.7cu.cm = 300words

14 cu,cm = x

X=(300\*14)/7.7 = 545 words

A vessel is in the form of a hemispherical bowl on which is mounted a hollow cylinder. The diameter of the sphere is 14 cm and the total height of vessel is 15 cm, find the capacity of the vessel.

A.1977.23 cm3 B.1999.45 cm3

C.1840.67 cm3 D.1950.67 cm3 E.1833.27 cm3

15cm

Capacity of vessel = volume of cylinder + Volume of hemisphere

PI\*R^2\*H + 2/3\*PI\*R^3

Height of vessel = 15cm

Height of cylinder = 15-7=8cm

22/7\*7\*7\*8+2/3\*22/7\*7\*7\*7

1232+718.6=1950.6