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133 AWES_DEC2015_Maths_TGT

Maths

ABC is an isosceles triangle right-angled at B. Similar triangles ACD and ABE constructed on sides AC and AB respectively. Then the ratio between the areas of ΔABE and ΔACD :-

- 1 : 2
- $\sqrt{2} : 1$
- 2 : 1
- $1 : \sqrt{2}$

Question not answered

The correct option is " 1 : 2"Score:- 4

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132 AWES_DEC2015_Maths_TGT

Maths

Two poles of height 6m and 11m stand vertically upright on a plane ground. If the distance between their foot is 12m, then the distance between their top is:-

- 14m
- 12m
- 13m
- 11m

Question not answered

The correct option is "13m"Score:- 4

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120 AWES_DEC2015_Maths_TGT

Maths

Evaluate : $4\sin\alpha \cdot \sin\left(\alpha + \frac{\pi}{3}\right) \cdot \sin\left(\alpha + \frac{2\pi}{3}\right)$

- $\sin 2\alpha$
- $\sin 3\alpha$
- $\sin 4\alpha$
- $\sin \alpha$

Question not answered

The correct option is "sin 3 α "Score:- 4

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122 AWES_DEC2015_Maths_TGT

Maths

$\tan^{-1}\left(\frac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}}\right)$ is :-

- $\frac{\pi}{4} + \frac{1}{2}\cos^{-1}x$

- $\frac{\pi}{4} - \frac{1}{2} \cos^{-1} x$
- $-\frac{\pi}{4} + \frac{1}{2} \cos^{-1} x$
- $-\frac{\pi}{4} - \frac{1}{2} \cos^{-1} x$

Question not answered

The correct option is " $\frac{\pi}{4} - \frac{1}{2} \cos^{-1} x$ " Score:- 4

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129 AWES_DEC2015_Maths_TGT

Maths

$\int_0^{\frac{\pi}{2}} \frac{\sin x \, dx}{\sin x + \cos x}$ is:-

- $\frac{\pi}{2}$
- $\frac{\pi}{4}$
- $\frac{\pi}{3}$
- $\frac{\pi}{6}$

Question not answered

The correct option is " $\frac{\pi}{4}$ " Score:- 4

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104 AWES_DEC2015_Maths_TGT

Maths

If ${}^5P(4,n) = {}^6P(5,n-1)$, then n is:-

- 8
- 3
- 6
- 4

Question not answered

The correct option is "3" Score:- 4

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123 AWES_DEC2015_Maths_TGT

Maths

In any triangle the angles to be one another is 1:2:3, then the corresponding sides are:-

- $1 : 2 : \sqrt{3}$
- $1 : \sqrt{3} : 2$
- $2 : \sqrt{3} : 1$

$\sqrt{3}:2:1$

Question not answered

The correct option is " $1:\sqrt{3}:2$ "Score:- 4

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113 AWES_DEC2015_Maths_TGT

Maths

If $3^{4x-2} = 729$, then x is:-

- 1
 2
 4
 3

Question not answered

The correct option is "2"Score:- 4

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130 AWES_DEC2015_Maths_TGT

Maths

Find the rate of change of the area of a circle with respect to its radius r, when r=3 cm.

- $2\pi \text{ cm}^2/\text{s}$
 $6\pi \text{ cm}^2/\text{s}$
 $16\pi \text{ cm}^2/\text{s}$
 $12\pi \text{ cm}^2/\text{s}$

Question not answered

The correct option is " $6\pi \text{ cm}^2/\text{s}$ "Score:- 4

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141 AWES_DEC2015_Maths_TGT

Maths

If two vectors $|\vec{a}|=2$, $|\vec{b}|=1$ and $\vec{a} \cdot \vec{b} = 1$, then $(3\vec{a} - 5\vec{b}) \cdot (2\vec{a} + 7\vec{b})$ is..

- 2
 0
 -1
 1

Question not answered

The correct option is "0"Score:- 4

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144 AWES_DEC2015_Maths_TGT

Maths

If z is complex number and $iz^3+z^2-z+1=0$, then |z|:-

- $\sqrt{3}$

- $\sqrt{2}$
- 1
- 0

Question not answered

The correct option is "1"Score:- 4

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117 AWES_DEC2015_Maths_TGT

Maths

The relation R on the set of all real numbers, defined as $R = \{(a, b) : a \leq b^2\}$ is :-

- R is reflexive, transitive but not symmetric
- R is neither reflexive, nor symmetric, nor transitive
- R is reflexive, symmetric but not transitive
- R is an equivalence relation

Question not answered

The correct option is "R is neither reflexive, nor symmetric, nor transitive"Score:- 4

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103 AWES_DEC2015_Maths_TGT

Maths

If $[1 \ x \ 1] \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 3 & 2 & 5 \end{bmatrix} \begin{bmatrix} 1 \\ -2 \\ 3 \end{bmatrix} = 0$ then the value of x is :-

- $\frac{-5}{3}$
- $\frac{5}{3}$
- $\frac{3}{5}$
- $\frac{-3}{5}$

Question not answered

The correct option is " $\frac{-5}{3}$ "Score:- 4

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124 AWES_DEC2015_Maths_TGT

Maths

In ΔABC , $A=60^\circ$, $b=4$ cm, $c = \sqrt{3}$ cm, then the area of ΔABC is :-

- 2 sq cm
- $\sqrt{3}$ sq cm
- $4\sqrt{3}$ sq cm

- 3 sq cm

Question not answered

The correct option is "3 sq cm"Score:- 4

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101 AWES_DEC2015_Maths_TGT

Maths

Solutions of $a^2b^2x^2+b^2x-a^2x-1=0$ are:-

- $-a^2, b^2$
- $a^2, -b^2$
- $\frac{-1}{a^2}, \frac{1}{b^2}$
- $\frac{1}{a^2}, \frac{-1}{b^2}$

Question not answered

The correct option is " $\frac{-1}{a^2}, \frac{1}{b^2}$ "Score:- 4

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136 AWES_DEC2015_Maths_TGT

Maths

The eccentricity of the conic represented by $4x^2+9y^2=36$:-

- $\frac{\sqrt{7}}{3}$
- $\frac{\sqrt{5}}{3}$
- $\frac{\sqrt{2}}{3}$
- $\frac{\sqrt{3}}{3}$

Question not answered

The correct option is " $\frac{\sqrt{5}}{3}$ "Score:- 4

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100 AWES_DEC2015_Maths_TGT

Maths

If the systems of equations $2x+3y=7$, $(a+b)x+(2a-b)y=21$ has infinitely many solutions, then a and b are:-

- $a = 5, b = 1$
- $a = 5, b = -1$
- $a = -1, b = 5$
- $a = 1, b = 5$

Question not answered

The correct option is " $a = 5, b = 1$ "Score:- 4

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135 AWES_DEC2015_Maths_TGT

Maths

A circle touches all the four sides of a quadrilateral ABCD then AB+CD is equal to:-

- BC+AC
- BC+CD
- BC+AD
- BC+AB

Question not answered

The correct option is "BC+AD"Score:- 4

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109 AWES_DEC2015_Maths_TGT

Maths

The number of solid spheres each of diameter 6 cm that could be moulded to form a solid metal cylinder of height 45 cm and diameter 4 cm is:-

- 3
- 6
- 5
- 4

Question not answered

The correct option is "5"Score:- 4

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107 AWES_DEC2015_Maths_TGT

Maths

If α and β are two zeros of the polynomial x^2+px+q , then the polynomial having $\frac{1}{\alpha}$ and $\frac{1}{\beta}$ and as its zeros is:-

- qx^2+qx+p
- px^2-px+q
- px^2+qx+1
- qx^2+px+1

Question not answered

The correct option is " qx^2+px+1 "Score:- 4

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116 AWES_DEC2015_Maths_TGT

Maths

Divide 16 into two parts such that twice the square of the larger part exceeds the square of the smaller part by 164.

- 12, 4
- 8, 8

- 10, 6
- 13, 3

Question not answered

The correct option is "10, 6"Score:- 4

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111 AWES_DEC2015_Maths_TGT

Maths

The area of triangle is 80 cm^2 and its perimeter 20 cm. The radius of its inscribed circle is:-

- 10 cm
- 12 cm
- 4 cm
- 8 cm

Question not answered

The correct option is "8 cm"Score:- 4

23 of 60

128 AWES_DEC2015_Maths_TGT

Maths

$\int \frac{dx}{x(x^4+1)}$ is:-

- $\frac{1}{4} \log \left| \frac{x^4}{1+x^4} \right| + c$
- $\frac{1}{4} \log |1 + x^4| + c$
- $\frac{1}{4} \log \left| \frac{1}{1+x^4} \right| + c$
- $\frac{1}{4} \log \left| \frac{1+x^4}{x^4} \right| + c$

Question not answered

The correct option is " $\frac{1}{4} \log \left| \frac{x^4}{1+x^4} \right| + c$ "Score:- 4

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114 AWES_DEC2015_Maths_TGT

Maths

The graph of a quadratic polynomial is:-

- Straight Line
- Circle
- Ellipse
- Parabola

Question not answered

The correct option is "Parabola"Score:- 4

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146 AWES_DEC2015_Maths_TGT

Maths

The mean of 1, 3, 4, 5, 7, 4 is m , the numbers 3, 2, 2, 4, 3, 3, p have mean $m-1$ and median q , then $p+q$ is:-

- 9
- 10
- 4
- 7

Question not answered

The correct option is "7"Score:- 4

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159 AWES_DEC2015_Maths_TGT

Maths

If $2^x = 3^y = 6^{-z}$, then $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$ is equal to :-

- $\frac{-1}{2}$
- 1
- $\frac{3}{2}$
- 0

Question not answered

The correct option is "0"Score:- 4

27 of 60

131 AWES_DEC2015_Maths_TGT

Maths

The maximum surface area of a cylinder that can be inscribed in a sphere of radius R is:-

- $\pi R^2(\sqrt{3} + 1)$
- $\pi R(\sqrt{3} + 1)$
- $\pi R(\sqrt{5} + 1)$
- $\pi R^2(\sqrt{5} + 1)$

Question not answered

The correct option is " $\pi R^2(\sqrt{5} + 1)$ "Score:- 4

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155 AWES_DEC2015_Maths_TGT

Maths

$$\frac{1}{1.2.3} + \frac{1}{2.3.4} + \frac{1}{3.4.5} + \dots + \frac{1}{n(n+1)(n+2)}$$

By induction for all $n \in \mathbb{N}$ is equal to:-

- $\frac{n(n+7)}{8(n+1)(n+2)}$
- $\frac{n(n+9)}{10(n+1)(n+2)}$
- $\frac{n(n+5)}{6(n+1)(n+2)}$
- $\frac{n(n+3)}{4(n+1)(n+2)}$

Question not answered

$$\frac{n(n+3)}{4(n+1)(n+2)}$$

The correct option is " $\frac{n(n+3)}{4(n+1)(n+2)}$ "Score:- 4

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102 AWES_DEC2015_Maths_TGT

Maths

p^{th} , q^{th} and r^{th} terms an A.P are a, b and c respectively, then:-

- $p(a - q) + q(b - r) + r(c - p) = 0$
- $a(p - q) + b(q - r) + c(r - p) = 0$
- $a(q - r) + b(r - p) + c(p - q) = 0$
- $a(p - b) + b(q - c) + c(r - a) = 0$

Question not answered

The correct option is " $a(q - r) + b(r - p) + c(p - q) = 0$ "Score:- 4

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145 AWES_DEC2015_Maths_TGT

Maths

If $z = 2 - 3i$, then $z^2 - 4z$ is:-

- $2+3i$
- 13
- $-2+3i$
- -13

Question not answered

The correct option is "-13"Score:- 4

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138 AWES_DEC2015_Maths_TGT

Maths

The equation of parabola whose focus $(-2, 0)$ and the directrix $x + 3 = 0$ is:-

- $y^2 = 2x - 5$
- $y^2 = -2x - 5$
- $y^2 = 2x + 5$
- $y^2 = -2x + 5$

Question not answered

The correct option is " $y^2 = 2x + 5$ " Score:- 4

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134 AWES_DEC2015_Maths_TGT

Maths

Three times the sum of the squares of the sides of a triangle is equal to _____ times the sum of the squares of the medians of the triangle.

- 4
- $\sqrt{3}$
- $\sqrt{2}$
- 2

Question not answered

The correct option is "4" Score:- 4

33 of 60

127 AWES_DEC2015_Maths_TGT

Maths

If $x^p y^q = (x+y)^{p+q}$, then $\frac{dy}{dx}$:-

- $\frac{y}{x}$
- $\frac{-y}{x}$
- $\frac{-x}{y}$
- $\frac{x}{y}$

Question not answered

The correct option is " $\frac{y}{x}$ " Score:- 4

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154 AWES_DEC2015_Maths_TGT

Maths

I am three times as old as my son. Five years later I will be $2\frac{1}{2}$ times as old as my son. How old is my son?

- 20 years
- 10 years
- 45 years
- 15 years

Question not answered

The correct option is "15 years"Score:- 4

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121 AWES_DEC2015_Maths_TGT

Maths

If $\tan x = \frac{-4}{3}$, $\frac{\pi}{2} < x < \pi$, then the value of $\tan \frac{x}{2}$:-

- 2
- $\frac{-1}{2}$
- $\frac{1}{2}$
- 2

Question not answered

The correct option is "2"Score:- 4

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156 AWES_DEC2015_Maths_TGT

Maths

In any ΔABC , $a(b \cdot \cos C - c \cdot \cos B)$ is:-

- $(a^2 - b^2)$
- $(b^2 - c^2)$
- $(c^2 - a^2)$
- $(c^2 - b^2)$

Question not answered

The correct option is " $(b^2 - c^2)$ "Score:- 4

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151 AWES_DEC2015_Maths_TGT

Maths

An article sold for ₹ 700 instead of ₹ 800. Then the discount allowed is:-

- $12\frac{1}{2}\%$
- $15\frac{1}{2}\%$
- 10%

14%

Question not answered

The correct option is " $12\frac{1}{2}\%$ " Score:- 4

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142 AWES_DEC2015_Maths_TGT

Maths

If $\vec{a} = \hat{i} + 2\hat{j} - 3\hat{k}$ and $\vec{b} = 3\hat{i} - \hat{j} + 2\hat{k}$, then $\vec{a} + \vec{b}$ and $\vec{a} - \vec{b}$ are

- Collinear
- Parallel
- Perpendicular
- None of the above

Question not answered

The correct option is "Perpendicular" Score:- 4

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106 AWES_DEC2015_Maths_TGT

Maths

$\lim_{x \rightarrow 0} \frac{1 - \cos 2x}{x^2}$ is :-

- 2
- 0
- 1
- 4

Question not answered

The correct option is "2" Score:- 4

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149 AWES_DEC2015_Maths_TGT

Maths

A family has two children. What is the probability that both are boys given that at least one of them is a boy?

- $\frac{1}{3}$
- $\frac{3}{4}$
- $\frac{2}{3}$
- $\frac{1}{4}$

Question not answered

The correct option is " $\frac{1}{3}$ " Score:- 4

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115 AWES_DEC2015_Maths_TGT

Maths

The constant term in the expansion of $(x - \frac{1}{x})^{10}$ is :-

- 152
- 152
- 252
- 252

Question not answered

The correct option is "-252" Score:- 4

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110 AWES_DEC2015_Maths_TGT

Maths

The length, breadth and height of a room are 8m 50cm, 6m 25cm and 4m 75cm respectively. Then the length of the longest rod that can measure the dimensions of the room exactly is:-

- 1190 cm
- 35 cm
- 1170 cm
- 25 cm

Question not answered

The correct option is "25 cm" Score:- 4

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148 AWES_DEC2015_Maths_TGT

Maths

A problem in mathematics is given to three students whose chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ respectively. The probability that the problem solved is:-

- $\frac{1}{4}$
- $\frac{2}{5}$
- $\frac{3}{5}$
- $\frac{3}{4}$

Question not answered

The correct option is " $\frac{3}{4}$ " Score:- 4

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137 AWES_DEC2015_Maths_TGT

Maths

The radius of the circle $x^2 + y^2 + 6x - 8y - 24 = 0$ is:-

- 5
- 1
- 9
- 7

Question not answered

The correct option is "7" Score:- 4

45 of 60

140 AWES_DEC2015_Maths_TGT

Maths

If \vec{a} is a unit vector and $(2\vec{a} + \vec{b}) \cdot (2\vec{a} - \vec{b}) = 2$, then $|\vec{b}|$ is ..

- 0
- 2
- 1
- $\sqrt{2}$

Question not answered

The correct option is " $\sqrt{2}$ " Score:- 4

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108 AWES_DEC2015_Maths_TGT

Maths

The ratio of lateral surface area to the total surface area of a cylinder with base diameter 1.6 m and height 20 cm is:-

- 1:9
- 9:1
- 5:1
- 1:5

Question not answered

The correct option is "1:5" Score:- 4

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158 AWES_DEC2015_Maths_TGT

Maths

The approximate value of $\sqrt{100000}$ is:-

- 316
- 315
- 318
- 317

Question not answered

The correct option is "316"Score:- 4

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143 AWES_DEC2015_Maths_TGT

Maths

If $(x+iy)^{1/3} = a+ib$, then $\frac{x}{a} + \frac{y}{b}$ is :-

- $-4(a^2 + b^2)$
- $4(a^2 - b^2)$
- $4(a^2 + b^2)$
- $4(b^2 - a^2)$

Question not answered

The correct option is " $4(a^2 - b^2)$ "Score:- 4

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153 AWES_DEC2015_Maths_TGT

Maths

X takes 3 hours more than Y to walk 30 km. But if X doubles his pace, he is ahead of Y by $1\frac{1}{2}$ hours, then the speed of Y is:-

- $\frac{1}{5} \text{ km/hr}$
- $\frac{3}{10} \text{ km/hr}$
- 5 km/hr
- $\frac{10}{3} \text{ km/hr}$

Question not answered

The correct option is "5 km/hr"Score:- 4

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112 AWES_DEC2015_Maths_TGT

Maths

Find the largest number which divides 245 and 1029 leaving remainder 5 in each case.

- 18

- 16
- 48
- 32

Question not answered

The correct option is "16"Score:- 4

51 of 60

139 AWES_DEC2015_Maths_TGT

Maths

If $\vec{a} \cdot \vec{b} = 0$ and $\vec{a} + \vec{b}$ makes an angle of 30° with \vec{a} , then :-

- $|\vec{b}| = \sqrt{3}|\vec{a}|$
- $|\vec{a}| = \sqrt{3}|\vec{b}|$
- $|\vec{a}| = 2|\vec{b}|$
- $|\vec{b}| = 2|\vec{a}|$

Question not answered

The correct option is " $|\vec{a}| = \sqrt{3}|\vec{b}|$ "Score:- 4

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126 AWES_DEC2015_Maths_TGT

Maths

Derivative of $\cos^{-1}\left(\frac{x-x^{-1}}{x+x^{-1}}\right)$ is :-

- $\frac{x}{1+x^2}$
- $\frac{2}{1+x^2}$
- $\frac{-2}{1+x^2}$
- $\frac{-x}{1+x^2}$

Question not answered

The correct option is " $\frac{-2}{1+x^2}$ "Score:- 4

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119 AWES_DEC2015_Maths_TGT

Maths

If $x = n\pi$, $n \in \mathbb{I}$ then $\cot x$ is:-

- 0

- 2
- 1
- Not defined

Question not answered

The correct option is "Not defined"Score:- 4

54 of 60

150 AWES_DEC2015_Maths_TGT

Maths

A man buys some pens at 3 for ₹ 30 and an equal number at 4 for ₹ 48. He sells them at 5 for ₹ 56, then the overall gain percentage is:-

- $1\frac{8}{11}\%$
- $1\frac{10}{11}\%$
- $1\frac{7}{11}\%$
- $1\frac{9}{11}\%$

Question not answered

The correct option is " $1\frac{9}{11}\%$ "Score:- 4

55 of 60

118 AWES_DEC2015_Maths_TGT

Maths

If $\frac{\pi}{2} < x < \pi$, $\cot^{-1} \left(\frac{\sqrt{1+\sin x} + \sqrt{1-\sin x}}{\sqrt{1+\sin x} - \sqrt{1-\sin x}} \right)$ is equal to :-

- $\frac{\pi}{4} - \frac{x}{4}$
- $\frac{\pi}{2} - \frac{x}{2}$
- $\frac{\pi}{2} + \frac{x}{2}$
- $\frac{\pi}{4} - \frac{x}{2}$

Question not answered

The correct option is " $\frac{\pi}{2} - \frac{x}{2}$ "Score:- 4

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105 AWES_DEC2015_Maths_TGT

Maths

$$\left(x - \frac{1}{3x^2}\right)^9,$$

In the expansion of the term independent of x is:-

- T₅
- T₃
- T₆
- T₄

Question not answered

The correct option is "T₄"Score:- 4

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157 AWES_DEC2015_Maths_TGT

Maths

A and B can do piece of work in 8 days, B and C can do the same work in 12 days and A, B, C complete the same work in 6 days, in how many days can A and C finish it?

- 8 days
- 12 days
- 24 days
- 16 days

Question not answered

The correct option is "8 days"Score:- 4

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147 AWES_DEC2015_Maths_TGT

Maths

The arithmetic mean and mode of a data are 24 and 12 respectively, then its median is:-

- 18
- 22
- 20
- 25

Question not answered

The correct option is "20"Score:- 4

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125 AWES_DEC2015_Maths_TGT

Maths

$$\left(\frac{\sin(x+a)}{\cos x}\right)$$

Derivative of is:-

- $\sec x \cdot \cos^2 a$
- $\sec x \cdot \cos a$
- $\sec^2 x \cdot \cos a$

$\sec^2 x \cdot \cos^2 a$

Question not answered

The correct option is " $\sec^2 x \cdot \cos a$ " Score:- 4

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152 AWES_DEC2015_Maths_TGT

Maths

If three numbers are in the ratio 3 : 2 : 5 be such that sum of their squares is 1862, then the middle numbers will be:-

7

21

14

35

Question not answered

The correct option is "14" Score:- 4