

SSC CGL 2017 EXAM PAPER : Held on 10-AUG-2017 Shift-3 (Mathematics)

QID : 251 - By which least number should 5000 be divided so that it becomes a perfect square?

Options:

- 1) 2
- 2) 5
- 3) 10
- 4) 25

Correct Answer: 2

QID : 252 - A can do a work in 8 days, B can do the same work in 10 days and C can do the same work in 12 days. If all three of them do the same work together and they are paid Rs 7400, then what is the share (in Rs) of B?

Options:

- 1) 2600
- 2) 3000
- 3) 2400
- 4) 2000

Correct Answer: 2400

QID : 253 - If the radius of the cylinder is increased by 25%, then by how much percent the height must be reduced, so that the volume of the cylinder remains same?

Options:

- 1) 36
- 2) 56
- 3) 64

4) 46

Correct Answer: 36

QID : 254 - The marked price of an article is 20% more than its cost price. If 5% discount is given on the marked price, then what is the profit percentage?

Options:

- 1) 5
- 2) 14
- 3) 15
- 4) 25

Correct Answer: 14

QID : 255 - If $A : B = 2 : 5$, $B : C = 4 : 3$ and $C : D = 2 : 1$, then what is value of $A : C : D$?

Options:

- 1) $6 : 5 : 2$
- 2) $7 : 20 : 10$
- 3) $8 : 30 : 15$
- 4) $16 : 30 : 15$

Correct Answer: $16 : 30 : 15$

QID : 256 - The average runs conceded by a bowler in 5 matches is 45 and 15.75 in other 4 matches. What is the average runs conceded by the bowler in 9 matches?

Options:

- 1) 15
- 2) 32
- 3) 35
- 4) 53.5

Correct Answer: 32

QID : 257 - A person bought pens at 25 for a rupee and sold at 15 for a rupee. What is his profit percentage?

Options:

1)

$16\frac{2}{3}$

2)

$33\frac{1}{3}$

3)

$$66\frac{2}{3}$$

4) 40

Correct Answer:

QID : 258 - 80 litre mixture of milk and water contains 10% milk. How much milk (in litres) must be added to make water percentage in the mixture as 80%?

Options:

1) 8

2) 9

3) 10

4) 12

Correct Answer: 10

QID : 259 - A bus starts running with the initial speed of 21 km/hr and its speed increases every hour by 3 km/hr. How many hours will it take to cover a distance of 252 km?

Options:

1) 3

2) 5

3) 8

4) 10

Correct Answer: 8

QID : 260 - A sum of Rs 400 becomes Rs 448 at simple interest in 2 years. In how many years will the sum of Rs 550 amounts to Rs 682 at the same rate?

Options:

1) 2

2) 3

3) 3.5

4) 4

Correct Answer: 4

QID : 261 -

What is the value of $\frac{1+x}{1-x^4} \div \frac{x^2}{1+x^2} \times x(1-x)$?

$\frac{1+x}{1-x^4} \div \frac{x^2}{1+x^2} \times x(1-x)$ का मान क्या है?

Options:

1) 1/x

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2) $x^2 - 1$

3) $x + 1$

4) x

Correct Answer: $1/x$

QID : 262 -

If $x + \frac{1}{x} = 17$, then what is the value of $\frac{x^4 + \frac{1}{x^2}}{x^2 - 3x + 1}$?

यदि $x + \frac{1}{x} = 17$, तो $\frac{x^4 + \frac{1}{x^2}}{x^2 - 3x + 1}$ का मान क्या है?

Options:

1) $2431/7$

2) $3375/7$

3) $3375/14$

4) $3985/9$

Correct Answer: $2431/7$

QID : 263 -

What is the value of x in the equation

$$\sqrt{\frac{1+x}{x}} - \sqrt{\frac{x}{1+x}} = \frac{1}{\sqrt{6}}?$$

समीकरण $\sqrt{\frac{1+x}{x}} - \sqrt{\frac{x}{1+x}} = \frac{1}{\sqrt{6}}$ में x का

मान क्या है?

Options:

1) -2

2) 3

3) 2

4) None of these

Correct Answer: 2

QID : 264 -

If $2\left[x^2 + \frac{1}{x^2}\right] - 2\left[x - \frac{1}{x}\right] - 8 = 0$, then what are the two values of $x - \frac{1}{x}$?

यदि $2\left[x^2 + \frac{1}{x^2}\right] - 2\left[x - \frac{1}{x}\right] - 8 = 0$, तो $x - \frac{1}{x}$ के दो मान क्या हैं?

Options:

- 1) -1 or 2
- 2) 1 or -2
- 3) -1 or -2
- 4) 1 or 2

Correct Answer: -1 or 2

QID : 265 - In $\triangle ABC$, $\angle BAC = 90^\circ$ and AD is drawn perpendicular to BC. If BD = 7 cm and CD = 28 cm, then what is the length (in cm) of AD?

Options:

- 1) 3.5
- 2) 7
- 3) 10.5
- 4) 14

Correct Answer: 14

QID : 266 - A chord of length 60 cm is at a distance of 16 cm from the centre of a circle. What is the radius (in cm) of the circle?

Options:

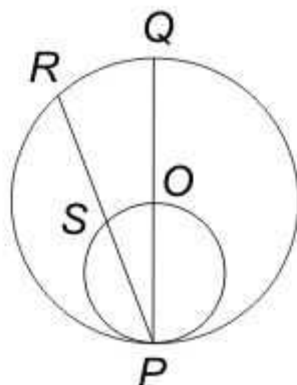
- 1) 17
- 2) 34
- 3) 51
- 4) 68

Correct Answer: 34

QID : 267 -

In the given figure, a smaller circle touches a larger circle at P and passes through its centre O . PR is a chord of length 34 cm, then what is the length (in cm) of PS ?

दी गई आकृति में, एक छोटा वृत्त एक बड़े वृत्त को बिंदु P पर स्पर्श कर रहा है तथा उसके केंद्र O से होकर गुजरता है। PR एक जीवा है जिसकी लम्बाई 34 से.मी. है, तो PS की लम्बाई (से.मी. में) क्या है?



Options:

1) 9

2) 17

3) 21

4) 25

Correct Answer: 17

QID : 268 -

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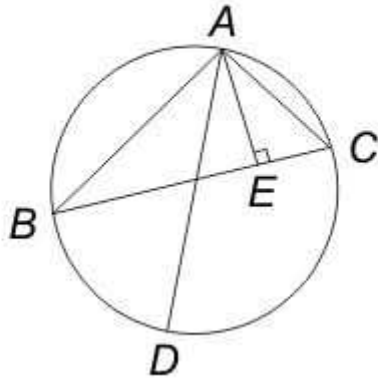
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In the given figure, ABC is a triangle in which, $AB = 10$ cm, $AC = 6$ cm and altitude $AE = 4$ cm. If AD is the diameter of the circum-circle, then what is the length (in cm) of circum-radius?

दी गई आकृति में, ABC एक त्रिभुज है जिसमें $AB = 10$ से.मी., $AC = 6$ से.मी. तथा शीर्षलम्ब $AE = 4$ से.मी. है। यदि AD बाह्य वृत्त का व्यास है, तो बाह्य त्रिज्या की लम्बाई (से.मी. में) क्या है?



Options:

- 1) 3
- 2) 7.5
- 3) 12
- 4) 15

Correct Answer: 7.5

QID : 269 - What is the simplified value of $\operatorname{cosec}^6 A - \cot^6 A - 3 \operatorname{cosec}^2 A \cot^2 A$?

Options:

- 1) -2
- 2) -1
- 3) 0
- 4) 1

Correct Answer: 1

QID : 270 -

What is the simplified value of $\sqrt{\frac{\sec A - 1}{\sec A + 1}}$?

$\sqrt{\frac{\sec A - 1}{\sec A + 1}}$ का सरलीकृत मान क्या है?

Options:

1) $\operatorname{cosec} A - \cot A$

2) $\sec A - \tan A$

3) $\sec^2 A$

4) $\sec A \operatorname{cosec} A$

Correct Answer: $\operatorname{cosec} A - \cot A$

QID : 271 - If $\tan A = 1/2$ and $\tan B = 1/3$, then what is the value of $\tan (2A + B)$?

Options:

1) 1

2) 3

3) 5

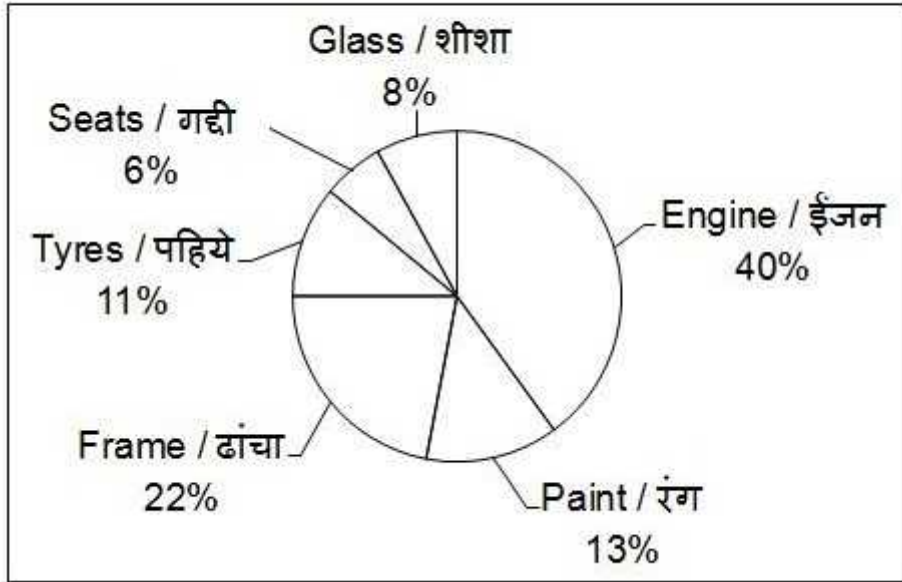
4) 9

Correct Answer: 3

QID : 272 -

The pie chart given below shows the percentage of time taken by different processes in making a car.

नीचे दिये गए वृत्त चित्र में एक कार बनाने की विभिन्न प्रक्रियाओं में लगने वाले समय के प्रतिशत को दर्शाया गया है।



If total time taken to make a car is 300 hours, then what is the total time (in hours) taken in paint and frame?

Options:

- 1) 99
- 2) 72
- 3) 105
- 4) 66

Correct Answer: 105

QID : 273 -

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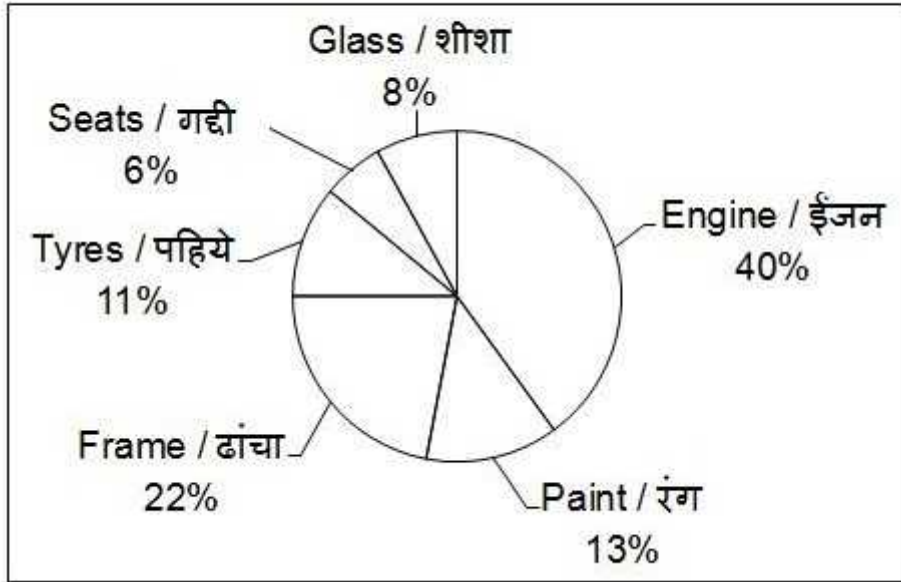
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The pie chart given below shows the percentage of time taken by different processes in making a car.

नीचे दिये गए वृत्त चित्र में एक कार बनाने की विभिन्न प्रक्रियाओं में लगने वाले समय के प्रतिशत को दर्शाया गया है।



If time taken in seats is 192 hours, then what is the time taken (in hours) in glass?

Options:

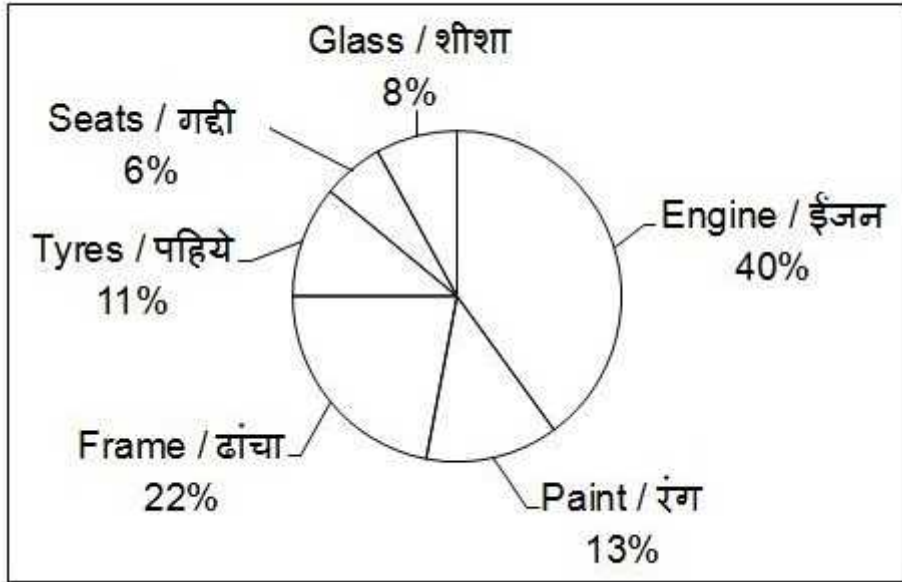
- 1) 256
- 2) 352
- 3) 416
- 4) 278

Correct Answer: 256

QID : 274 -

The pie chart given below shows the percentage of time taken by different processes in making a car.

नीचे दिये गए वृत्त चित्र में एक कार बनाने की विभिन्न प्रक्रियाओं में लगने वाले समय के प्रतिशत को दर्शाया गया है।



If total time taken in engine and tyres is 127.5 hours, then what is the difference (in hours) in time taken by frame and glass respectively?

Options:

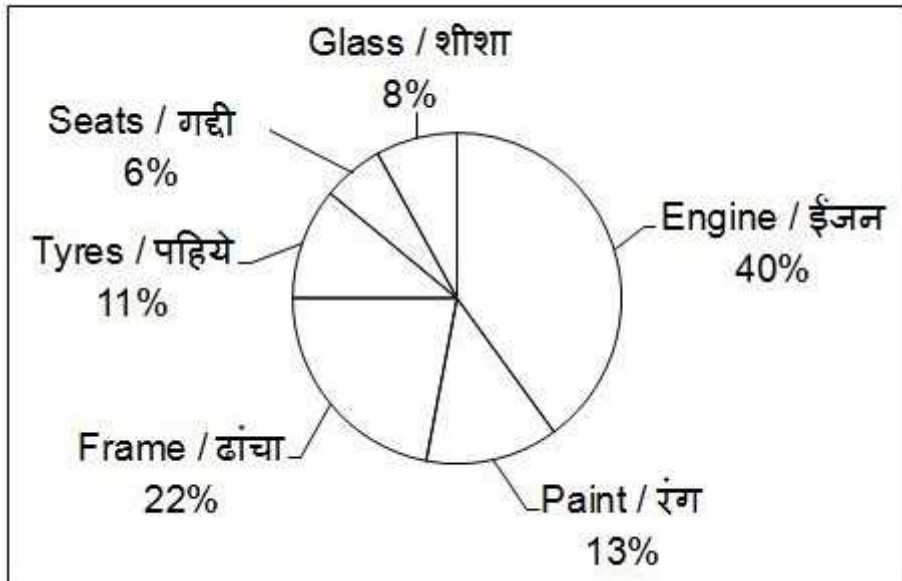
- 1) 27.5
- 2) 12.5
- 3) 40
- 4) 35

Correct Answer: 35

QID : 275 -

The pie chart given below shows the percentage of time taken by different processes in making a car.

नीचे दिये गए वृत्त चित्र में एक कार बनाने की विभिन्न प्रक्रियाओं में लगने वाले समय के प्रतिशत को दर्शाया गया है।



15% of total time is spent on quality check and this time is equally taken from all other processes. So What will be the new sectorial angle (in degrees) made by total time of seats and glass?

Options:

- 1) 28.6
- 2) 32.4
- 3) 35.8
- 4) 31.6

Correct Answer: 32.4



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