How many different ways can you arrange FORMULA?

.11984e7

1.024390e7

21

5040

5764801

An experiment of students randomly selected a letter from one of four boxes after first selecting a box at random. The first two boxes contain the letters s, o, h; the third contains c, a, h; and the fourth contains t, o , a.

What is the probability that they will select an “a”?

5/6

1/3

1/6

2/9

2/3

See chart

If 3 people from the 21 year old bracket drop out and 2 more join in the 26 bracket. What happens to the mean and median?

AGE FREQ AGE FREQ

21 4 21 1

23 7 23 7

25 1 25 1

26 1 26 3

28 3 28 3

30 6 30 6

Both increase

Mean increase, median decrease

Median decrease, mean increase

Both decrease

No change

Find the standard deviation of the following test scores:

(note: use N-1 in denominator)

56, 56, 58, 60, 65, 79, 80, 91, 92, 92, 93, 94, 94, 95, 96, 98

16

16.2

16.4

16.6

16.8

A certain machine requires a combo of two brass fittings. If the two are fit together, the measurement of each must fall within two standard deviations of the mean. Measurements of both fittings fit a normal distribution.

What is the probability that two fittings chosen at random will fit together?

83%

87%

91%

95%

99%

Law of Large # definitions: sample mean – converge in probability to dist. mean if sample is large

Which survey methods are likely to report results that can be extended to entire state population? Pick 3.

# of computers in the home, conducted on internet

# of computers in the home, conducted on phone

# of people working more than 40hrs, conducted by mail

# of people working more than 40hrs, conducted by phone

# of TV in household, conducted by call-in TV program

# of students in household, conducted by phone

Eleven students trying to qualify for school. To qualify they must score more than 2 standard deviations above the mean on national test. The mean is 135 and the standard deviation is 12. The student scores follow:

195

171

160

158

159

140

136

130

120

109

104

Answer choices:

3

4

6

7

9

Pre-Cal.

P(x,y) on the terminal side of angle away from origin. The distance from the origin to P(x,y) is defined as r.

What is the sin of the angle in terms of b, r, and y?

F(x) is (2-3x)/5 What is F$ ¯¹$(x)

(2-3x)/5

5/2+ 3x

(5x+2)/3

5/(2-3x)

(2- 5x)/3

Find the exact value of tan 390⁰.

½

√ 3/2

2/ √3

1/ √ 3

√ 3

What degree is equal to 3π/4 radians?

135

A tree growing perpendicular to the horizon on a slope that has an angle of depression of 20⁰ below the horizontal. The tree cast a 75ft shadow down the slope. The sun has an elevation of 40⁰ above the slope as measured from the top of the shadow to the top of the tree.

What is the height of the tree to the nearest foot?

27

75

96

98

167

What is the exact solution of 2cos x + 1 = 0 for all real x.

4π/3 + 2πn

5π/3 + 2πn

5π/6 + 2πn

3π/2 + 2πn

π/4 + 2πn

Which is equal to sin(u + v)?

Sin u + cos v

Sin u cos v – cos u sin v

Sin u sin v – cos u cos v

Sin u cos v + cos u sin v

Sin u + sin v

Y= log (lower b) x

X = y ^b

B = log (lower x) y

Y = b^x

X = log (lower b) y

X = b^y

Solve 4 ^(x + 2) = 100 round to nearest thousand

1.219

1.322

1.833

4.000

70.135

A shipping company comparing weight of truckload cargo being shipped with number of miles per gallon and the average truck weight. As the weight increases the miles per gallon decreases.

What type of variation is this?

Inverse

Joint

Direct

Regress

Direct to the nth power

Solve x² + 2x – 8 ≤ 0

(-4, 2)

[-4, 2]

(-∞, 4] U [2, ∞)

-4, 2

(-∞, 4) U (2, ∞)

Calculus

What is the limit as x approaches 3 for f(x) (√ (x + 1))/x + 4

What are the points of discontinuity for f(x) 1/x²+1 on the interval (-∞,∞)

-1

0

1

2

Continuous at all points

What is the antiderivative of f(x) 9x² + 4x

3x³ + 2x² + c

3x² + 2x + c

9x³ + 4x² + c

6x³ + 2x² + c

4.5x² + 2x +c

F(x) 2x(√x²-5)

Approximate the derivative of f(x) when x = 4 to the nearest hundred

-3.02

16.28

19.09

24.91

112.77

F(x) 2 sin x

The antiderivative is F(x) + c, assume c=0

Approximate the antiderivative to the nearest 1000th of f(x) when x=3 radians

-1.980

-0.990

-0.141

0.141

1.980

s₀ - 16t² = s(t) t= time s₀ = initial postion

A solid metal object dropped from a altitude of 14,400 feet. Do not consider air resistance.

What is the velocity of objects after 10 seconds?

-40 feet per second

-80 feet per second

-160 feet per second

-240 feet per second

-320 feet per second