

Pre-Calculus 12 Practice Exam 2

MULTIPLE-CHOICE (Calculator permitted)

- Solve $\cos 3x = \sin x$, $0 \leq x \leq \frac{\pi}{2}$
 - 0.39
 - 0.40, 1.25
 - 0.79
 - 0.79, 1.18
- Determine the equation of a circle with centre $(0,0)$ passing through the point $P(-2,5)$
 - $x^2 + y^2 = 3$
 - $x^2 + y^2 = 9$
 - $x^2 + y^2 = 21$
 - $x^2 + y^2 = 29$
- Determine the measure of the standard position angle θ if the point $P(-4,3)$ is on the terminal arm of angle θ , where $0^\circ \leq \theta < 360^\circ$
 - 37°
 - 53°
 - 127°
 - 143°
- Express as a single logarithm: $\log a - \log b - 3\log c$
 - $\log \frac{a}{bc^3}$
 - $\log \frac{a}{b^3c^3}$
 - $\log \frac{ac^3}{b}$
 - $\log \frac{ac^3}{b^3}$
- Determine the x -intercept of $y = 5^x - 3$
 - 2
 - 0.008
 - 0.6
 - 0.68
- An investment earns 2.25% per annum compounded daily. How many years would be required for an investment to triple in value? Assume all years have 365 days.
 - 4.88
 - 5.41
 - 48.83
 - 49.37
- Determine the number of different arrangements of all the letters in the word TRIGONOMETRY.
 - 4 989 600
 - 59 875 200
 - 119 750 400
 - 479 001 600
- An area code is the first 3 digits in a phone number and indicates the location of either the province or the city. In Canada, the following area codes exist:

Manitoba	204	Ontario	519, 613, 705, 807
Saskatchewan	306	Yellowknife and NW Territories	867
Quebec (Quebec City)	418	Toronto (Ontario)	289, 416
Montreal	514	Ottawa (Ottawa Metro)	438
Newfoundland	709	New Brunswick	506
Quebec	426, 819	Alberta	780
British Columbia	250, 604, 778	New Scotia	902
Alberta (local)	403		

Notice that there are 3 area codes for British Columbia: 250, 604 and 778. It will be necessary to add another area code as the population increases. The new area code cannot be the same as an existing code, it must begin with a 3 and end in an even number. Determine the number of possible area codes to choose from.

- 40
 - 44
 - 49
 - 50
- In a standard deck of 52 cards, determine the number of 5-card hands that must contain at least 3 queens.
 - 4512
 - 4560
 - 4704
 - 4752
 - A dance group has twelve people from which five need to be chosen to compete in a national competition. Bob and Nancy are in the group of twelve and have recently obtained gold at a regional competition. They are therefore required to be among the five selected for the national competition. Given this requirement, how many different five-member teams are possible?
 - 120
 - 220
 - 252
 - 792
 - Determine the 5th term in the expansion of $(3x + 2y)^n$, where $n \geq 6$
 - ${}_nC_4(3x)^{n-4}(2y)^4$
 - ${}_nC_5(3x)^{n-5}(2y)^5$
 - ${}_nC_4(3x)^4(2y)^{n-4}$
 - ${}_nC_5(3x)^5(2y)^{n-5}$
 - A sheet of metal 12 cm $\times$ 12 cm will be used to make an open-top box by removing a square of length x in each corner and turning up the sides as shown in the diagram.



What is the volume of the box as a function of x ?

- $V = x^3$
 - $V = x(12 - x)^2$
 - $V = 144 - 4x^2$
 - $V = x(12 - 2x)^2$
- Determine all solutions to the equation $\sqrt{x+4} = 3x$
 - 0.61, 0.72
 - 0.61
 - 0.72
 - 1.33

Pre Calculus 12 Bc Exam

Xiaolong Qi

A red circular graphic with a gradient, appearing as a stylized arrow or a partial circle, located to the right of the name bar.

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