Specialist Maths Unit 3/4 Practice Questions

Inverse Trig Integral Practice

Question 1

Evaluate each of the following:

a. $\int \frac{1}{\sqrt{16-x^2}}dx$ 1 mark

b. $\int \frac{-1}{\sqrt{9-4x^2}}dx$ 1 mark

c. $\int \frac{1}{4+x^2}dx$ 1 mark

Question 2

Find the antiderivative of each of the following expressions

a. $\int \frac{4}{\sqrt{9-3x^2}}dx$ 2 mark

b. $\int \frac{5}{1+2x^2}dx$ 2 mark

c. $\int \frac{-2}{\sqrt{3-x^2}}dx$ 2 mark

Question 3

Evaluate each of the following integrals

a. $\int_1^{\sqrt{3}} \frac{2}{\sqrt{16-4x^2}}dx$ 2 mark

b. $\int_{\sqrt{3}}^{3\sqrt{3}} \frac{3}{9+x^2}dx$ 2 mark

Question 4

a. Find an antiderivative of $\frac{1}{3x-2}$ 1 mark

b. Evaluate $\int_1^2 \frac{1}{3x-2}\,dx$ 2 mark

c. Evaluate $\int_{-2}^2 \frac{1}{3x+2}\,dx$ 2 mark

Question 5

Evaluate each of the following expressions

a. $\int(-5x^2+4)^{\frac{-1}{2}}dx$ 2 mark

b. $\int(3+4x^2)^{-1}dx$ 2 mark

Question 6

a. Find $\int \frac{-2x}{\sqrt{64-9x^4}}dx$ 2 mark

b. Hence, find the value of $\int_0^1 \frac{-2x+3x^3}{\sqrt{64-9x^4}}dx$ 3 mark

Question 7

For $f(x) = sin\,(\int \frac{-2}{\sqrt{9-4x^2}}dx)$, state its simplest rule 3 mark

Box Hill
0415 932 889
Suite 2, 4 Ellingworth Parade,
Box Hill（韩国超市楼上）

Glen Waverley
0416 358 669
1/245 Springvale Road,
Glen Waverley