HIGH SCHOOL ROUND ONE

You will have

INTEGRAL #1

READY,

GET SET,...

2:00

INTEGRAL #1

$$\int_0^1 2012^{2012}$$

2:00

INTEGRAL #1

$$\int_0^1 2012^{\,2012}$$

$$= \left[2012 \cdot \frac{2012^{201}}{201}\right]_0^1$$

$$= \boxed{\frac{2012}{201}}$$

INTEGRAL #2

READY,

GET SET,...

2:00

INTEG

2:00

INTEGRAL #2

$$\int_0^2 \cos\frac{\pi}{\quad}$$

$$= \frac{}{\pi}\int_0^{\pi} \cos \qquad \left[\quad = \frac{\pi}{\quad} \qquad = \frac{\pi}{} \quad \right]$$

$$= \frac{}{\pi}\Big[\sin \quad \Big]_0^{\pi} \quad = \frac{}{\pi}\left(\frac{\sqrt{\quad}}{2} - 0 \right)$$

$$= \boxed{\frac{\sqrt{\quad}}{\pi}}$$

INTEGRAL #3

READY,

GET SET,...

2:00

INTEGRAL #3

$$\int_0^1 (\quad + \quad)(\quad +$$

2:00

INTEGRAL #3

$$\int_0^1 (\sqrt{\quad} + \quad)(\quad + \sqrt{\quad})$$

INTEGRAL #4

READY,

GET SET,...

2:00

INTEGRAL #4

$$\int_0^{\sqrt{\pi\ 2}} \sin\left(\ ^2\right)$$

2:00

INTEGRAL #4

$$\int_0^{\sqrt{\pi/2}} \sin\left(x^2\right)$$

$$= \frac{1}{2}\int_0^{\pi/2} \sin \qquad \left[\ u = x^2 \qquad du = 2x\,dx\ \right]$$

$$= \frac{1}{2}\left[-\cos \right]_0^{\pi/2}$$

$$= \boxed{\frac{1}{2}}$$

READY,

GET SET,...

2:00

INTEGRAL #5

$$\int_1^2 \frac{+}{\cdot \quad 2}$$

2:00

INTEGRAL #6

READY,

GET SET,...

2:00

INTEGRAL #6

$$\int_{\pi}^{\pi\ 2} \frac{\cos}{1 - \cos^2}$$

2:00

INTEGRAL #6

$$\int_{\pi}^{\pi\ 2} \frac{\cos}{1-\cos^2}$$

$$= \int_{\pi}^{\pi\ 2} \frac{\cos}{\sin^2}$$

$$= \int_{1\ 2}^{1} \frac{1}{\ 2} \qquad \left[\ = \sin \qquad = \cos\ \right]$$

$$= \left[-\frac{1}{-}\right]_{1\ 2}^{1} = \boxed{1}$$

Q H

INTEGRAL #7

READY,

GET SET,...

2:00

INTEGRAL #7

$$\int_0^1 \left(\sqrt{} + \sqrt{}\right)$$

2:00

INTEGRAL #7

$$\int_0^1 \left(\sqrt{} + \sqrt{}\right)$$

$$= \int_0^1 \left(+ \right)$$

$$= \left[\frac{}{} + \frac{}{}\right]_0^1$$

$$= \boxed{1}$$

INTEGRAL #8

READY,

GET SET,...

2:00

INTEGRAL #8

2:00

INTEGRAL #8

$$\int_{\pi}^{\pi} \sec \left(\tan - \sec \right)$$

$$= \int_{\pi}^{\pi} \left(\sec \tan - \sec^2 \right)$$

$$= \left[\sec - \tan \right]_{\pi}^{\pi}$$

$$= \left(2 - \sqrt{}\right) - \left(\sqrt{2} - 1\right) = \boxed{- \sqrt{} - \sqrt{2}}$$

INTEGRAL #9

READY,

GET SET,...

2:00

INTEGRAL #9

$$\int_0^1 \sqrt{(\sqrt{}+1)}$$

2:00

INTEGRAL #9

$$\int_0^1 \sqrt{(\sqrt{}+1)}$$

$$= \frac{2}{} \int_1^2 \qquad \left[\; = \sqrt{}+1 \qquad = \frac{}{2}\sqrt{} \; \right]$$

$$= \frac{2}{} \left[\; \right]_1^2$$

$$= \boxed{\frac{}{2}}$$

INTEGRAL #10

READY,

GET SET,...

2:00

INTEGRAL #10

$$\int_1 \left(\quad + \frac{1}{-} \right)^2$$

2:00

INTEGRAL #11

READY,

GET SET,...

2:00

INTEGRAL #11

$$\int_0^{\pi/2} \cos$$

2:00

INTEGRAL #12

$$\int_{-}^{1} (\quad + \quad)\sqrt{\quad +}$$

2:00

INTEGRAL #12

$$\int_{-}^{1} (\quad + \quad)\sqrt{\quad +}$$

$$= \int_{-}^{1} (\quad + \quad)^{2}$$

$$= \int_{0}^{2} \qquad \left[\quad = \quad + \qquad = \quad\right]$$

$$= \left[\frac{2\ \ ^{2}}{\ \ }\right]_{0} = \boxed{\ \ }$$

INTEGRAL #13

READY,

GET SET,...

2:00

INTEGRAL #13

$$\int_0^{\pi} \left(\cos \quad - \sin \quad\right)$$

2:00

INTEGRAL #13

$$\int_0^{\pi} \left(\cos \quad - \sin \quad\right)$$

$$= \int_0^{\pi} \left(\cos^2 \quad + \sin^2 \quad\right)\left(\cos^2 \quad - \sin^2 \quad\right)$$

$$= \int_0^{\pi} 1 \cdot \left(\cos^2 \quad - \sin^2 \quad\right) \qquad = \int_0^{\pi} \cos 2$$

$$= \left[\frac{\sin 2}{2}\right]_0^{\pi} \quad = \boxed{\sqrt{\quad}}$$

INTEGRAL #14

READY,

GET SET,...

2:00

2:00

INTEGRAL #14

$$\int_0^1 2^{\,2}\cdot \qquad \cdot \qquad \cdot \qquad$$

$$= \int_0^1 120^{\,1}$$

$$= \left[120 \cdot \frac{\qquad}{\qquad}\right]_0^1 = \left[\qquad\right]_0^1$$

$$= \square$$

INTEGRAL #15

READY,

GET SET,...

2:00

2:00

Q H

INTEGRAL #15

$$\int_0^1 \sqrt{10\ 000000010\ 010\ 010\ 010\ 01000}$$

THANKS FOR PLAYING

LET'S EAT!

(YOU HAVE TWO MINUTES TO FINISH YOUR FOOD)

THE FINAL ROUND BEGINS AFTER DINNER