| | |
|---|---|
| رقم الورقة | |
| رقم المغلف | |

حاضر ▢

غائب ▢

سلطنة عمان
وزارة التربية والتعليم

# امتحان دبلوم التعليم العام للمدارس الخاصة (ثنائية اللغة)
## للعام الدراسي ١٤٣٥/١٤٣٤ هـ - ٢٠١٣ / ٢٠١٤ م
## الدور الثاني - الفصل الدراسي الأول

**تنبيه:**
- المادة: رياضيات.
- الأسئلة في ( ١٤ ) صفحة.
- زمن الإجابة: ثلاث ساعات.
- الإجابة في الورقة نفسها.

**تعليمات وضوابط التقدم للامتحـان:**

- الحضور إلى اللجنة قبل عشر دقائق من بدء الامتحان للأهمية.
- إبراز البطاقة الشخصية لمراقب اللجنـة.
- يمنع كتابة رقم الجلوس أو الاسم أو أي بيانات أخرى تدل على شخصية الممتحن في دفتر الامتحان، وإلا ألغي امتحانه.
- يحظر على الممتحنين أن يصطحبوا معهم بمركز الامتحان كتبا دراسية أو كراسات أو مذكرات أو هواتف محمولة أو أجهزة النداء الآلي أو أي شيء له علاقة بالامتحان كما لا يجوز إدخال آلات حادة أو أسلحة من أي نوع كانت أو حقائب يدوية أو آلات حاسبة ذات صفة تخزينية.
- يجب أن يتقيد المتقدمون بالزي الرسمي (الدشداشة البيضاء والمصر أو الكمة للطلاب والدارسين والزي المدرسي للطالبات واللباس العماني للدارسات ) ويمنع النقاب داخل المركز ولجان الامتحان.
- لا يسمح للمتقدم المتأخر عن موعد بداية الامتحان بالدخول إلا إذا كان التأخير بعذر قاهر يقبله رئيس المركز وفي حدود عشر دقائق فقط.
- يتم الالتزام بالإجراءات الواردة في دليل الطالب لأداء امتحان شهادة دبلوم التعليم العام.
- يقوم المتقدم بالإجابة عن أسئلة الامتحان المقالية بقلم الحبر (الأزرق أو الأسود).
- يقوم المتقدم بالإجابة عن أسئلة الاختيار من متعدد بتظليل الشكل (▢) وفق النموذج الآتي:

س - عاصمـة سلطنة عمـــان هي:
▢ القاهرة ▢ الدوحة
■ مسقط ▢ أبوظبي

**ملاحظة:** يتم تظليل الشكل (■) باستخدام القلم الرصاص وعند الخطأ، امسح بعناية لإجراء التغيير.

**صحيح** ■ **غير صحيح** ▭ ◉ ◔ ☒ ☑

## Question 1 (28 marks)

**There are 14 multiple-choice items worth two marks each.**
**Shade in the correct answer for each of the following items .**

**1)** If $y = x^5$, then $\frac{dy}{dx} =$

- ☐ $x^4$
- ☐ $x^5$
- ☐ $5x^4$
- ☐ $5x^5$

**2)** The equation of the normal to curve $f(x) = x^2 + 3x$ at $x = 0$ is $y =$

- ☐ $-\frac{1}{2}x + 3$
- ☐ $-\frac{1}{3}x$
- ☐ $\frac{1}{3}x$
- ☐ $2x + 3$

**3)** If $f'(x) = 3x^2 - 12x + 9$, and the stationary point $y$ of occurs at $x = 3, 1$ , then the minimum point at $x =$

- ☐ 0
- ☐ 1
- ☐ 3
- ☐ 4

**4)** If $\frac{5x - 1}{(x + 1)(x - 2)} = \frac{A}{(x + 1)} + \frac{B}{(x - 1)}$ , then $B =$

- ☐ –1
- ☐ 1
- ☐ 2
- ☐ 3

**5)** A six sided die is thrown twice and the numbers landing face up are recorded. What is the probability of **not** same numbers landing face up?

- ☐ $\frac{1}{6}$
- ☐ $\frac{7}{12}$
- ☐ $\frac{5}{12}$
- ☐ $\frac{5}{6}$

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**6)** A student made two applications to two colleges. The probability of acceptance in the colleges of Engineering and Medicine are 0.5 and 0.3 respectively. If the probability of being rejected by both colleges is 0.85,what is the probability of acceptance in one of the two colleges?

- ☐ 0.15
- ☐ 0.2
- ☐ 0.65
- ☐ 0.8

**7)** If $y = -4 + \cos ec\theta$, and $\theta = \frac{\pi}{2}$, then the value of $y$ equals:

- ☐ –5
- ☐ –3
- ☐ 3
- ☐ 5

**8)** If $y = 6\cos x + 3 = 0$, then the value of $x$ (where $0^\circ < x < 360^\circ$) are:

- ☐ 60°, 240°
- ☐ 60°, 300°
- ☐ 120°, 240°
- ☐ 120°, 300°

**9)** $\frac{(\sec^2\theta - 1)}{\sec^2\theta} =$

- ☐ $\tan^2\theta$
- ☐ $\sin^2\theta$
- ☐ $\cos^2\theta$
- ☐ $\cot^2\theta$

**10)** $\sin\frac{1}{2}A \times \cos\frac{1}{2}A =$

- ☐ $\frac{1}{4}\sin^2 A$
- ☐ $\frac{1}{4}\cos^2 A$
- ☐ $\frac{1}{2}\sin A$
- ☐ $\frac{1}{2}\cos A$

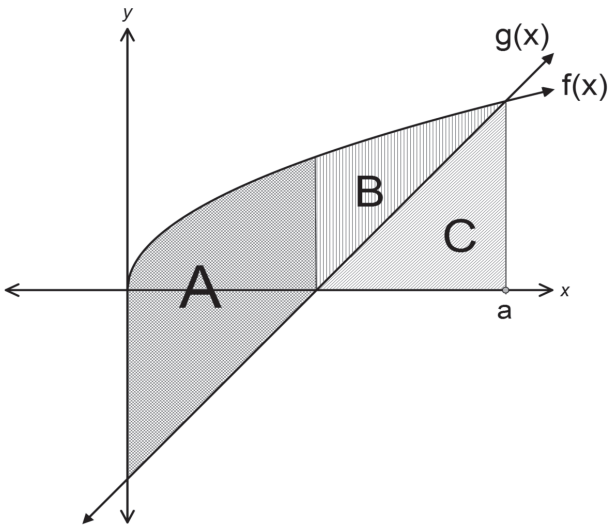
**11)** $\int \sqrt[3]{x}dx =$

- ☐ $\frac{4}{3}x^{\frac{3}{4}} + C$
- ☐ $\frac{3}{4}x^{\frac{4}{3}} + C$
- ☐ $\frac{3}{4}x^{\frac{3}{4}} + C$
- ☐ $\frac{4}{3}x^{\frac{4}{3}} + C$

**12)** If $f(t) = \int (2 - 6t)dt$, and $f(1) = 0$, then $f(t)$:

- ☐ $2t - 3t^2 - 1$
- ☐ $2t - 3t^2 - 2$
- ☐ $2t - 3t^2 + 1$
- ☐ $2t - 3t^2 + 2$

**13)** Consider the sketch below.




If A, B and C are three areas, then $\int_0^a (f(x) - g(x))dx =$

- ☐ A + B + C
- ☐ A + B – C
- ☐ A + B
- ☐ B + C

**14)** $\int_0^1 \frac{x - 4}{\sqrt{x} - 2} dx =$

- ☐ $-\frac{8}{3}$
- ☐ $-\frac{4}{3}$
- ☐ $\frac{4}{3}$
- ☐ $\frac{8}{3}$

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## Extended Questions

**Write your answer for each of the three questions in the space provided. Be sure to show all your work and the correct units where applicable.**

## Question Two: (14 marks)

**15)** If $\frac{4x^3 - 5x^2 - 2x - 4}{x^3 - 1} = A\,\frac{Bx^2 + C}{(x^3 - 1)}$ compute A, B and C. [3 marks]

**16)** Express $\frac{6x + 1}{(x^2 - 1)}$ in partial fractions. [3 marks]

**17)** Differentiate $f(x) = \frac{x^4 + 2x}{x^2}$ with respect to $x$. [3 marks]

**18)** Express $2\sqrt{2}\cos\theta + 2\sqrt{2}\sin\theta$ in the form $R\cos(\theta + \alpha)$ and calculate its maximum value. [5 marks]

## Question Three: (14 marks)

**19)** Given that $\lim_{h \to 0} \frac{f(x+h) - f(x)}{h} = x + 1$, calculate the gradient of the curve $f(x)$ when $x = 2$. [2 marks]

**20)** If $y = 3ax - 16$ is the equation of the tangent of $f(x) = 5x^3 - 3x + c$ at $x = 1$, then calculate the value of $a$. [2 marks]

**21)** Determine the range of values of $x$ for which is increasing, if $y' = x^2 + 6x + 5$

[3 marks]

**22)** A cylindrical can has radius ($r$), and height ($h$) = $\frac{16}{r^2}$. The material of can costs three rials per square metre. Calculate the radius ($r$) and height ($h$) of the can with the lowest cost.
[3 marks]

**23)** Calculate $\int x^{\sqrt{2}-1}\,dx$ [2 marks]

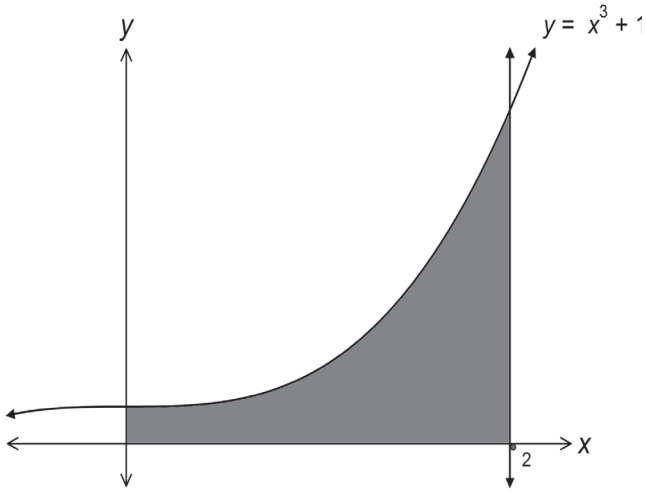
**24)** What is the equation of the curve whose gradient at $(x, y)$ is given by $5x^4 - 3$ and which passes through the point $(1, 0)$? [2 marks]

## Question Four: (14 marks)

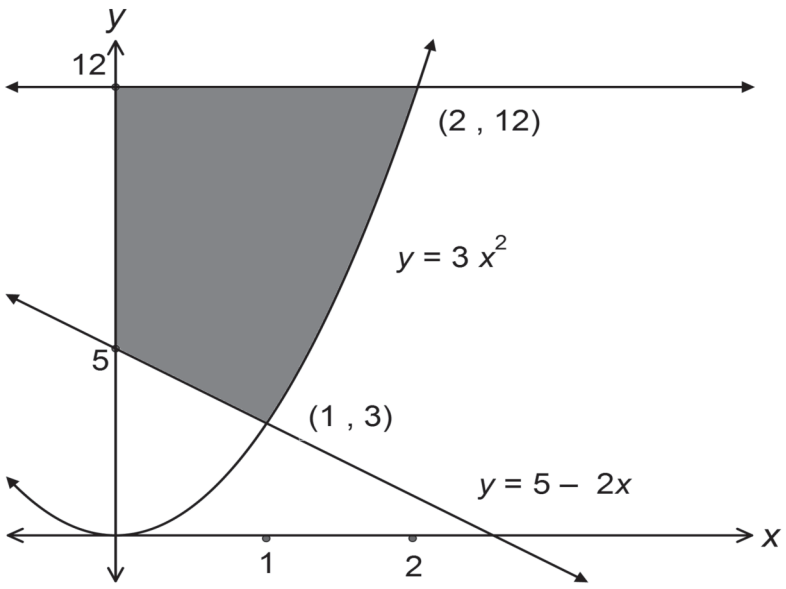
**25)** If $\sin A = \frac{5}{13}$, $\cos A = \frac{12}{13}$, $\sin B = \frac{4}{5}$, $\cos B = \frac{3}{5}$, calculate $\sin(A + B)$. [3 marks]

**26)** Prove that $(1 - \sec^2\alpha)(1 - \cos^2\alpha) = 1 - \tan^2\alpha - \cos^2\alpha$. [3 marks]

**27)** Calculate an approximation to the area bounded by the axis, $x = 2$ and $y = x^3 + 1$. Use the Trapezium Rule with one strip. [2 marks]



**28)** From the diagram below, calculate the shaded area. [2 marks]

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**29)** Two coins are flipped and the results are recorded. Draw a tree diagram to represent this information. [1 mark]

**30)** The probability that a person is training to drive a car is 0.8 and the probability that he will pass the driving test if he trains is 0.6. What is the probability that he will train and **not** pass the driving test? [3 marks]

**[End of Examination]**

# Formulae sheet for semester 1

## Differentiation:

1. $y = x^n \quad \frac{dy}{dx} = nx^{(n-1)} \qquad n \in \mathrm{R}$
2. $f'(x) = \lim \frac{f(x+h) - f(x)}{h}$
3. $y = kx^n \qquad \frac{dy}{dx} = knx^{(n-1)} \qquad n \in \mathrm{R}$
4. $y = f(x) \pm g(x) \qquad \frac{dy}{dx} = f'(x) \pm g'(x)$
5. $y = kf(x) \qquad \frac{dy}{dx} = kf'(x)$
6. Area and Volume of a cuboid with length, width and height as $l, w,$ and $h$ respectively.
   $Area = 2lw + 2wh + 2lh \qquad Volume = l \times w \times h$
7. Area and Volume of a cylinder with radius , $r,$ and height , $h$ .
   $Area = 2\pi rh + 2\pi r^2 \qquad Volume = \pi r^2 h$
8. Area and Volume of a sphere with radius , $r$ .
   $Area = 4\pi r^2 \qquad Volume = \frac{4}{3}\pi r^3$

## Trigonometry:

**Pythagorean Formulas**

1. $\sin^2 A + \cos^2 A = 1$
2. $\sec^2 A = 1 + \tan^2 A$
3. $\cos ec^2 A = 1 + \cot^2 A$

**Double Angle Formulas:**

1. $\sin 2A = 2\sin A \cos A$
   $\cos 2A = \cos^2 A - \sin^2 A$
2. $\cos 2A = 2\cos^2 A - 1$
   $\cos 2A = 1 - 2\sin^2 A$
3. $\tan 2A = \frac{2\tan A}{1 - \tan^2 A}$

**Compound Angle Formulas:**

1. $\sin(A + B) = \sin A \cos B + \cos A \sin B$
2. $\sin(A - B) = \sin A \cos B - \cos A \sin B$
3. $\cos(A + B) = \cos A \cos B - \sin A \sin B$
4. $\cos(A - B) = \cos A \cos B + \sin A \sin B$
5. $\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$
6. $\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$.

**Half Angle Formulas:**

1. $\sin^2 \frac{1}{2}A = \frac{1}{2}(1 - \cos A)$
2. $\cos^2 \frac{1}{2}A = \frac{1}{2}(1 + \cos A)$
3. $\sin^2 A = \frac{1}{2}(1 - \cos 2A)$
4. $\cos^2 A = \frac{1}{2}(1 + \cos A)$

The form $a\cos\theta + b\sin\theta : a\cos\theta + b\sin\theta$ can be expressed in the form $\mathrm{R}\cos(\theta \pm \alpha)$ or $\mathrm{R}\sin(\theta \pm \alpha)$ where $\mathrm{R} = \sqrt{a^2 + b^2}, \alpha = \arctan\frac{b}{a}$

## Integration:

1) $\int x^n dx = \frac{x^{(n+1)}}{n+1} + c, n \neq -1$
2) $\int [f(x) \pm g(x)]\, dx = \int f(x)\, dx \pm \int g(x)\, dx$
3) $\int kf(x)\, dx = k\int f(x)\, dx$
4) Area and volume of solids of revolution

$$Area = \int_a^b f(x)\, dx$$

$$Volume = \pi\int_a^b (f(x))^2\, dx$$

5) Trapezium rule

$$\int_a^b f(x)dx = \frac{h}{2}[y_0 + y_n + 2(y_1 + y_2 + \ldots\ldots + y_{n-1})$$

## Probability:

1) Addition Rule:

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

2) Conditional Probability:

$$P(A \text{ given } B) = P(A|B) = \frac{P(A \cap B)}{P(B)}$$

3) Multiplication Rule:

$$P(A \cap B) = P(A|B) \times P(B) \text{ or } P(B|A) \times P(A)$$

4) Independent Rule:

A and B are independent if:

$$P(A|B) = P(A) \text{ or } P(B|A) = P(B) \text{ or } \mathrm{P(A \cap B)} = P(A) \times P(B)$$

5) Mutually Exclusive Rule:

A and B are Mutually Exclusive if:

$$\mathrm{P(A \cap B)} = 0$$

6) $\frac{P(B' \cap A')}{P(A')} = \frac{1 - P(B \cup A)}{1 - P(A)}$

7) $P(A \cap B') = P(A) - P(A \cap B)$

# مُسَوَّدَة

**SULTANATE OF OMAN**
**MINISTRY OF EDUCATION**
**GENERAL EDUCATION DIPLOMA**
**BILINGUAL PRIVATE SCHOOLS**
**Marking Guide Of First Semester Examination – Mathematics**
**Second Session – 2013/2014**

| ( Multiple Choice ) | |
|---|---|
| **Answer** | **Mark** |

**Answers For Question One:**

| Question No. | Answer | page |
|---|---|---|
| 1 | $5x^4$ | 158 |
| 2 | $-\frac{1}{3}x$ | 162 |
| 3 | 3 | 236 |
| 4 | 3 | 180 |
| 5 | $\frac{5}{6}$ | 81 |
| 6 | 0.25 | 83 |
| 7 | $-3$ | 53 |
| 8 | 120 ,240 | 50 |
| 9 | $\sin^2\theta$ | 49 |
| 10 | $\frac{1}{2}\sin A$ | 68 |
| 11 | $\frac{3}{4}x^{\frac{4}{3}} + c$ | 167 |
| 12 | $2t - 3t^2 + 1$ | 165 |
| 13 | A + B + D | 336 |
| 14 | $+\frac{8}{3}$ | 330 |

**14 X 2 = 28 marks**

## Marking Guide for First Semester Examination – Mathematics
## Second Session – 2013/2014

| (Extended Questions) | | |
|---|---|---|
| **Answer** | **Mark** | **Page** |
| **QUESTION TWO (14 marks)** | | |
| **a) i. [3 marks]** | | 187 |
| $x^3-1\overline{)4x^3-5x^2-2x-4}$ $\quad 4$<br>$4x^3 \quad -4$<br>$-5x^2-2x$ | 1 | |
| $\frac{4x^3-5x^2-2x-4}{x^3-1}=4+\frac{-5x^2-2x}{x^3-1}$ | 1 | |
| $A=4, B=-5, C=-2$ | 1 | |
| **ii. [3 marks]** | | 187 |
| $\frac{6x+1}{x^2-1}=\frac{6x+1}{(x-1)(x+1)}$ | | |
| let $\frac{6x+1}{x^2-1}=\frac{A}{(x-1)}+\frac{B}{(x+1)} \rightarrow 1$ | $\frac{1}{2}$ | |
| then $6x+1=A(x+1)+B(x-1) \rightarrow 2$ | $\frac{1}{2}$ | |
| putting $x=1$ in 2<br>$7=2A$ | | |
| $A=\frac{7}{2}$ | $\frac{1}{2}$ | |
| Putting $x=-1$ in 2<br>$-5=-2B$ | | |
| $B=\frac{5}{2}$ | $\frac{1}{2}$ | |
| So $\frac{6x+1}{x^2-1}=\frac{7}{2(x-1)}+\frac{5}{2(x+1)}$ | 1 | |
| **b) [3 marks]** | | 158 |
| $f(x)=\frac{x^4+2x}{x^2}=x^{-2}(x^4+2x)=x^2+2x^{-1}$ | 1 | |
| $f'(x)=2x-2x^{-2}$ | 1+1 | |
| $f'(x)=2x-\frac{2}{x^2}$ | | |

**Marking Guide for First Semester Examination – Mathematics**
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| (Extended Questions) | | |
|---|---|---|
| **Answer** | **Mark** | **Page** |
| **c) [5 marks]** | | 76 |
| $2\sqrt{2}\cos\theta + 2\sqrt{2}\sin\theta \equiv R\cos(\theta+\alpha)$ | | |
| $\equiv R\cos\theta\cos\alpha - R\sin\theta\sin\alpha$ | 1 | |
| $2\sqrt{2} = R\cos\alpha$ | | |
| $2\sqrt{2} = -R\sin\alpha$ | | |
| $R = \sqrt{4(2)+4(2)} = 4$ | $1\frac{1}{2}$ | |
| $\tan\alpha = \frac{-2\sqrt{2}}{2\sqrt{2}} = -1, \alpha = 315$ | $1\frac{1}{2}$ | |
| $2\sqrt{2}\cos\theta + 2\sqrt{2}\sin\theta \equiv 4\cos(\theta+315^\circ)$ | | |
| the maximum value is 4 | 1 | |
| **QUESTION THREE (14 marks)** | | 153 |
| **a) i. [2 marks]** | | |
| $f'(x) = x+1$ | 1 | |
| $f'(2) = 2+1 = 3$ | 1 | 162 |
| **ii. [2 marks]** | | |
| $f'(x) = 15x^2 - 3$ | $\frac{1}{2}$ | |
| $f'(1) = 15 - 3 = 12$ | | |
| The gradient of the tangent $=12$ | $\frac{1}{2}$ | |
| $(y+4) = 12(x-1)$ | | |
| $y = 12x - 16$ | $\frac{1}{2}$ | |
| $3a = 12$ | | |
| $a = 4$ | $\frac{1}{2}$ | |
| **b) i) [3 marks]** | | 235 |
| $y' = x^2 + 6x + 5$ | | |
| $x^2 + 6x + 5 = 0$ | $\frac{1}{2}$ | |
| $(x+5)(x+1) = 0$ | | |
| $x = -5$ or $x = -1$ | $\frac{1}{2}$ | |

| (Extended Questions) | | |
|---|---|---|
| **Answer** | **Mark** | **Page** |
| | | 235 |

| Value of $x$ | e.g x=-6 | -5 | e.g x=-4 | -1 | e.g x=0 |
|---|---|---|---|---|---|
| Sign of $y'$ | +++++  | 0 | -----  | 0 | +++++  |

1

$y$ is increasing at <-5 and $x$> -1

1

**c) ii) [3 marks]**

Cost of the can=cost of the top + cost of the bottom + cost of the side

$C = 3\times(\pi r^2 + \pi r^2 + 2\pi rh)$

$= 6\pi r^2 + 6\pi(\frac{16}{r^2})$

$= 6\pi r^2 + \frac{96\pi}{r}$ $\frac{1}{2}$

$C' = 12\pi r - \frac{96\pi}{r^2}$ 242

$\frac{1}{2}$

$12\pi r - \frac{96\pi}{r^2} = 0$

$\frac{1}{2}$

$\frac{12\pi r^3 - 96\pi}{r^2} = 0$

$12\pi r^3 - 96\pi = 0$

$12\pi(r^3 - 8) = 0$

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

| Value of $r$ | e.g $r=1$ | 2 | e.g $r=3$ |
|---|---|---|---|
| Sign of $C'$ | -----  | 0 | ++++++  |

The minimum value of radius $r = 2m$ and height $h = \frac{16}{4} = 4m$ $\frac{1}{2}$

**Marking Guide for First Semester Examination – Mathematics**
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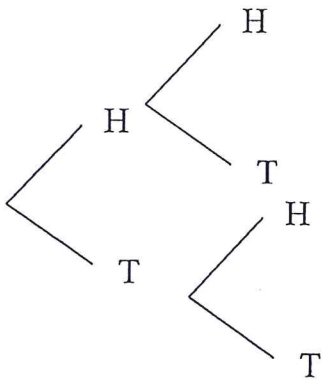
| (Extended Questions) | | |
|---|---|---|
| **Answer** | **Mark** | **Page** |
| **c) i) [2 marks]** $\int x^{\sqrt{2}-1}\,dx = \frac{x^{\sqrt{2}}}{\sqrt{2}} + c$ | 1+1 | 167 |
| **c) i i) [2 marks]** $\frac{dy}{dx} = 5x^4 - 3 \Rightarrow y = \int 5x^4 - 3$ | 1 | 171 |
| $\Rightarrow y = x^5 - 3x + c$ | | |
| When $x = 1, y = 0. \Rightarrow 0 = 1 - 3 + c$ | $\frac{1}{2}+\frac{1}{2}$ | |
| $\therefore c = 2. \Rightarrow y = x^5 - 3x + 2$ | | |
| **QUESTION FOUR (14 marks)** | | 60 |
| **a) i) [3 marks]** | | |
| $\sin(A+B) = \sin A\cos B + \cos A\sin B$ | 1 | |
| $\sin(A+B) = \frac{5}{13}\times\frac{3}{5} + \frac{12}{13}\times\frac{4}{5}$ | 1 | |
| $\sin(A+B) = \frac{15}{65} + \frac{48}{65} = \frac{63}{65}$ | 1 | |
| **a) ii) [3 marks]** | | 66 |
| $(1-\sec^2\alpha)(1-\cos^2\alpha) = -\tan^2\alpha(1-\cos^2\alpha)$ | 1 | |
| $= -\tan^2\alpha + \tan^2\alpha\cos^2\alpha$ | | |
| $= -\tan^2\alpha + \frac{\sin^2\alpha}{\cos^2\alpha}\times\cos^2\alpha$ | 1 | |
| $= -\tan^2\alpha + \sin^2\alpha$ | | |
| $= -\tan^2\alpha + (1-\cos^2\alpha)$ | | |
| $= 1 - \tan^2\alpha - \cos^2\alpha$ | 1 | |
| **Another possible solution** | 1 | |
| $1-\tan^2\alpha-\cos^2\alpha = -\tan^2\alpha + (1-\cos^2\alpha)$ | | |
| $= -\tan^2\alpha + \sin^2\alpha$ | | |
| $= -\tan^2\alpha + \frac{\sin^2\alpha}{\cos^2\alpha}\times\cos^2\alpha$ | 1 | |
| $= -\tan^2\alpha + \tan^2\alpha\cos^2\alpha$ | | |
| $= -\tan^2\alpha(1-\cos^2\alpha)$ | | |
| $= (1-\sec^2\alpha)(1-\cos^2\alpha)$ | 1 | |

| (Extended Questions) | | |
|---|---|---|
| **Answer** | **Mark** | **Page** |
| **b) i) [2 marks]** | | |
| $h = \frac{2-0}{1} = 2$ | $\frac{1}{2}$ | 340 |
| $y_o = 0^3 + 1 = 1$ | $\frac{1}{2}$ | |
| $y_1 = 2^3 + 1 = 9$ | $\frac{1}{2}$ | |
| $A \approx \frac{h}{2}[y_o + y_1]$ | | |
| $\approx \frac{2}{2}[1+9] \approx 10$ | $\frac{1}{2}$ | |
| **b) ii. [2 marks]** | | |
| $A = \int_0^1 (12 - [5 - 2x])\,dx$ | $\frac{1}{2}$ | 336 |
| $+ \int_1^2 (12 - 3x^2)\,dx$ | $\frac{1}{2}$ | |
| $= [7x + x^2]_0^1 + [12x - x^3]_1^2$ | $\frac{1}{2}$ | |
| $= (7+1) - 0 + (24-8) - (12-1) = 13$ | $\frac{1}{2}$ | |

| (Extended Questions) | | |
|---|---|---|
| **Answer** | **Mark** | **Page** |
| **c) i.[1 mark]**<br>**H: head , T: tree** | | 91 |
|  | 1 | |
| **c) ii. [3 marks]**<br>**A:** training to drive a car<br>**B:** passing the driving test<br>$P(A) = 0.8$<br>$P(B) = pass$<br>$P(B \setminus A) = 0.6$<br>$P(A \cap B') = ?$ | | 94 |
| $P(B \setminus A) = \frac{P(B \cap A)}{P(A)}$ | | |
| $0.6 = \frac{P(B \cap A)}{0.8}$ | 1 | |
| $P(B \cap A) = 0.6 \times 0.8$<br>$= 0.48$ | 1 | |
| $P(A \cap B') = P(A) - P(B \cap A)$<br>$= 0.8\text{-}0.48 = 0.32$ | 1 | |

**( End of the Marking Guide )**