Making Use of High-Stakes Examinations to Provide Diagnostic Feedback to Students and Teachers

Xiaoting Huang

Hong Kong Examinations and Assessment Authority

IAEA, April 2021

香港考試及評核局
Hong Kong Examinations and Assessment Authority

Formative Assessment

Summative Assessment

19000003

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HONG KONG EXAMINATIONS AND ASSESSMENT AUTHORITY
香港中學文憑考試成績通知書
HONG KONG DIPLOMA OF SECONDARY EDUCATION EXAMINATION RESULTS NOTICE

本成績通知書所列出的成績為暫定成績，於證書發出前，香港考試及評核局有權修正其內容。本文件並非證書，不能作證書使用。

The results shown in this Results Notice are provisional and the HKEAA reserves the right to amend them before the issue of a certificate. This document is not a certificate and must not be regarded as such.

科目 Subject		科目等級 Subject Level / Grade	分部等級 Component Level
甲類學科 Category A Subjects			
中國語文	CHINESE LANGUAGE	5*(Five*)	
. 閱讀	. Reading		5**(Five**)
. 寫作	. Writing		5*(Five*)
. 聆聽與綜合能力	. Listening and Integrated Skills		5*(Five*)
. 說話	. Speaking		5*(Five*)
英國語文	ENGLISH LANGUAGE	4(Four)	
. 閱讀	. Reading		5(Five)
. 寫作	. Writing		4(Four)
. 聆聽與綜合能力	. Listening and Integrated Skills		5(Five)
. 說話	. Speaking		4(Four)
數學 必修部分	MATHEMATICS Compulsory Part	4(Four)	
通識教育	LIBERAL STUDIES	5(Five)	
生物	BIOLOGY	4(Four)	
化學	CHEMISTRY	4(Four)	

COPY COPY COPY COPY COPY

年份 Year: 2019

發出日期 Date of Issue: 10/7/2019

學校 School: 10999

ABC Secondary School

考生編號 Candidate No.: 190000001

身分證明文件號碼 Identification Document No.

Y123456(7)

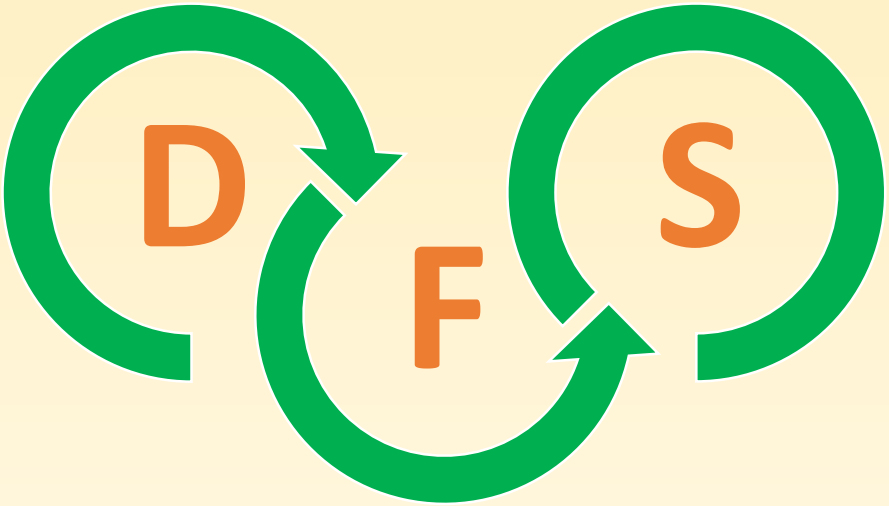
報考科目總數 No. of Subject(s) Entered: 陸 SIX

考生姓名及地址 Name and Address of Candidate

陳大文
CHAN TAI MAN
FL/RM A, 99/F
HONG HONG MANSION
1001 YEE WO ST
CAUSEWAY BAY HONG KONG

註釋見背頁 Explanatory notes are printed overleaf

(Class Name: 6B)



HKDSE Diagnostic Feedback System

香港考試及評核局
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How Does It Work?

Teachers	Students	HKDSE
• Customize a DSE paper • Assign the task to students	• Complete the task online	• Student report • Teacher report

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Step 1: Teachers

- Customize a DSE paper
- Assign the task to students

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香港教育城 HKedCity

中文 | Main Page

Member Login:

zm0-tea001

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Log in

or log in with these accounts:

Join Membership:

Register

Online Question Bank

oqb.hkedcity.net/teacher/dfspaper

Teacheraccount 1 | 中 |

Online Question Bank Mathematics Switch to Student Mode Options

View Paper / Report My Paper DFS Paper Select Report Create Paper

Filter

Subject: Mathematics Sort By: Modify Time, descending

考評局數學科2019全卷中文版(DFS) / HKEAA

Last Modified: 2020-10-14 14:35

Publish

HKEAA Mathematics 2019 Paper English version (DFS) / HKEAA

Last Modified: 2020-10-14 14:34

Publish

考評局數學科2018全卷中文版(DFS) / HKEAA

Contents 45 0 0 Publish Setting 0 Save As Cannot Publish

Title: DSE 2019 Math Paper

Description: New Paper Descrption

Question 1 / 45 Print

$(a-b)(a^2+ab-b^2)=$

A $(a-b)^3$.

B a^3-b^3 .

C $a^3-2ab^2+b^3$.

D $a^3-2a^2b+2ab^2+b^3$.

Information

Author: HKEAA
Language: English(Bilingual)
Remarks: 2019 No.1

Access Right

School

Title: DSE 2019 Math Paper

Description: New Paper Descrption

Question 1 / 45 Print

$(a-b)(a^2+ab-b^2)=$

A $(a-b)^3$.

B a^3-b^3 .

C $a^3-2ab^2+b^3$.

D $a^3-2a^2b+2ab^2+b^3$.

Information

Author: HKEAA
Language: English(Bilingual)
Remarks: 2019 No.1

Access Right

School

Question 2 / 45 Print

Contents 45 0 0 | Publish Setting 45 | Save As | Cannot Publish

Assign to

Enter Student Name / Group Name

- Custom Group 0 / 0 Add / Edit Group
- Class Level / Class / Student 45 / 450
  - S4 45 / 225
    - S4A 45 / 45
    - S4B 0 / 45
    - S4C 0 / 45
    - S4D 0 / 45
    - S4E 0 / 45
  - S5 0 / 225

Type	Name
Class	S4A

1 - 1 of 1.

Available Time

Contents 45 0 45 | Publish Setting 45 | Save As | Cannot Publish

Assign to

Enter Student Name / Group Name

- Custom Group 0 / 0 Add / Edit Group
- Class Level / Class / Student 45 / 450
  - S4 45 / 225
    - S4A 45 / 45
    - S4B 0 / 45
    - S4C 0 / 45
    - S4D 0 / 45
    - S4E 0 / 45
  - S5 0 / 225

Type	Name
Class	S4A

1 - 1 of 1.

Available Time

Publish time: Immediately Custom

Paper Summary

Selected Group	S4A
Subject	Mathematics
Author	Teacheraccount 1
No. of Questions	45
Time Allowed	75 Minutes
Mandatory	No
Question Order	Sequential
Choice Order	Sequential

Settings

Title	DSE 2019 Math Paper
Description	
Type	Test
Student Can View Report	After Paper Submit
Publish time	Immediately
End Time	2020-11-30 00:00

Publish Back

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Filter
Subject: Mathematics Year: 2020 - 2021 Sort By: Publish Time, descending

DSE 2019 Math Paper / Myself

Submission: 32 / 45

Test In Progress DFS

Start Time: 2020-11-05 15:22
End Time: 2020-11-27 23:55

Change End Time Recall Report Share

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Step 2: Students

- Complete the task online

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Incognito

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ENG | 主頁

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保持登入 顯示密碼

忘記密碼 | 忘記帳戶

登入

或以其他帳戶登入:

加入成為會員:

註冊

Filter

Sort By: Start Time, ascending

DSE 2019 Math Paper / Teacheraccount 2

Mathematics | In Progress | Assignment

Deadline: 2020-11-30 00:00

Start Time: 2020-11-03 14:48

Start

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Online Question Bank
oqb.hkedcity.net/paper/771
Incognito

Mathematics

DSE 2019 Math Paper

1 Hour(s) 15 Minutes

Information

Author	Teacheraccount 2
Date	2020-11-27 23:55
No. of Questions	45

Back Continue

$(a-b)(a^2+ab-b^2)=$

A $(a-b)^3$.

B a^3-b^3 .

C $a^3-2ab^2+b^3$.

D $a^3-2a^2b+2ab^2+b^3$.

$$\frac{(6x^7)^2}{4x^5} =$$

A $3x^4$.

B $9x^4$.

C $3x^9$.

D $9x^9$.

If $6x-7y=40=2x+11y$, then $y=$

A -4 .

B 2 .

C 4 .

D 9 .

The mean, the range and the variance of a set of numbers are m, r and v respectively. Each number of the set is multiplied by 6 and then 5 is added to each resulting number to form a new set of numbers. Which of the following is/are true?

I. The mean of the new set of numbers is $6m+5$.
II. The range of the new set of numbers is $6r+5$.
III. The variance of the new set of numbers is $6v+5$.

A I only
B II only
C I and III only
D II and III only

The mean, the range and the variance of a set of numbers are m, r and v respectively. Each number of the set is multiplied by 6 and then 5 is added to each resulting number to form a new set of numbers. Which of the follow

I. The mean of the new set of numbe
II. The range of the new set of numb
III. The variance of the new set of nu

A I only
B II only
C I and III only
D II and III only

You still have 1 question(s) unanswered.
Please click 'Submit' to hand in your paper or 'Back' to review your answers.

Submit Back

Your paper has been submitted successfully.

Back

Online Question Bank

Options

My Paper | Create Paper | View Paper / Report | DFS | Test | Exercise | Revision

Student Progress Report

Filter
Subject: Mathematics Sort By: Publish Time

DSE 2019 Math Paper / Teacheraccount 2

Mathematics Assignment

80 %

Submission Time: 2020-11-05 15:41

Report | Review

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Step 3: HKDSE

- Student report
- Teacher report

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Student Report

- Overall performance summary
- Strength and weakness
- Paper review

Online Question Bank

Options

My Paper | Create Paper | View Paper / Report

DFS | Test | Exercise | Revision

Student Progress Report

Filter

Subject: Mathematics Sort By: Publish Time

DSE 2019 Math Paper / Teacheraccount 2

Mathematics Assignment

80 %

Submission Time: 2020-11-05 15:41

Report | Review

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Online Question Bank

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Incognito

Student account 1 | 中 |

Online Question Bank

Options

DFS

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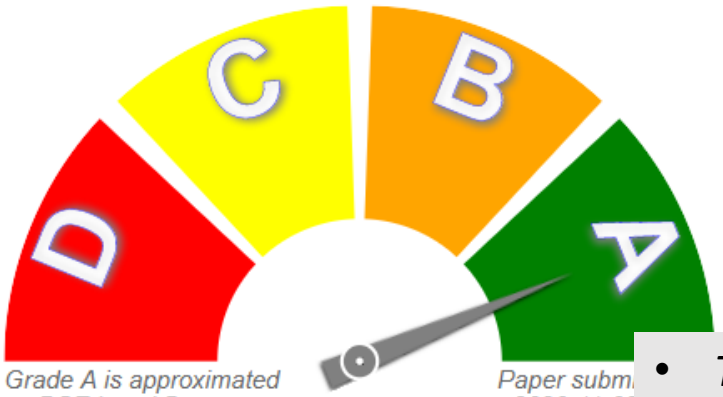
Estimated Grade

Student S4A 1



Grade A is approximated as DSE Level 5.

Paper submi... 2020-11-03

A

- Students have comprehensive knowledge and understanding of mathematical concepts in the curriculum.
- Students are able to solve mathematical problems of a wide range of unfamiliar situations. Students can use a variety of strategies to handle complex tasks and have the ability to make relevant arguments and mathematical reasoning.

- Raise students' awareness
- Reflect on what math learning involves
- Encourage students to aim at achieving a higher level

- *Th... mu... the... actual 2019 DSE math exam*
- *Grade A does not equal to level 5*

Your last predicted grade is B (approximated as DSE ... 4), assessed on 2020-10-29 17:06.

D

- Students are able to solve simple mathematical problems by performing straightforward or routine procedures according to clearly given numerical information, algebraic relationships, basic geometric properties, associated constraints and so on.

DFS

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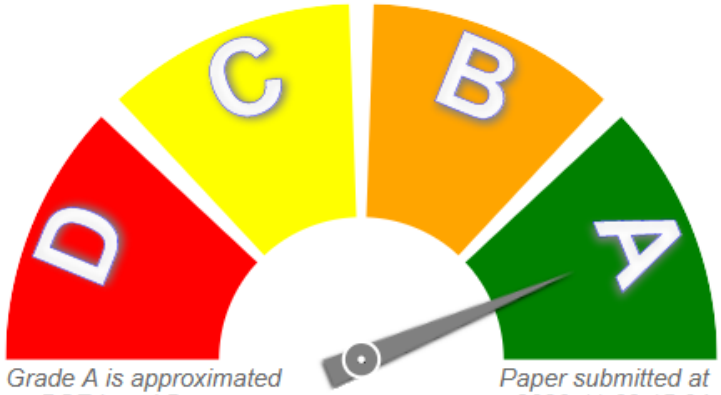
Estimated Grade

Student S4A 1



Grade A is approximated as DSE Level 5.

Paper submitted at 2020-11-03 15:04

Your last predicted grade is B (approximated as DSE Level 4), assessed on 2020-10-29 17:06.

A

- Students have comprehensive knowledge and understanding of mathematical concepts in the curriculum.
- Students are able to solve mathematical problems of a wide range of unfamiliar situations. Students can use a variety of strategies to handle complex tasks and have the ability to make relevant arguments and mathematical reasoning.

B

- Students have sound knowledge and understanding of mathematical concepts in the curriculum.
- Students are able to solve mathematical problems of unfamiliar situations. Students can handle a range of tasks and have the ability to make relevant arguments.

C

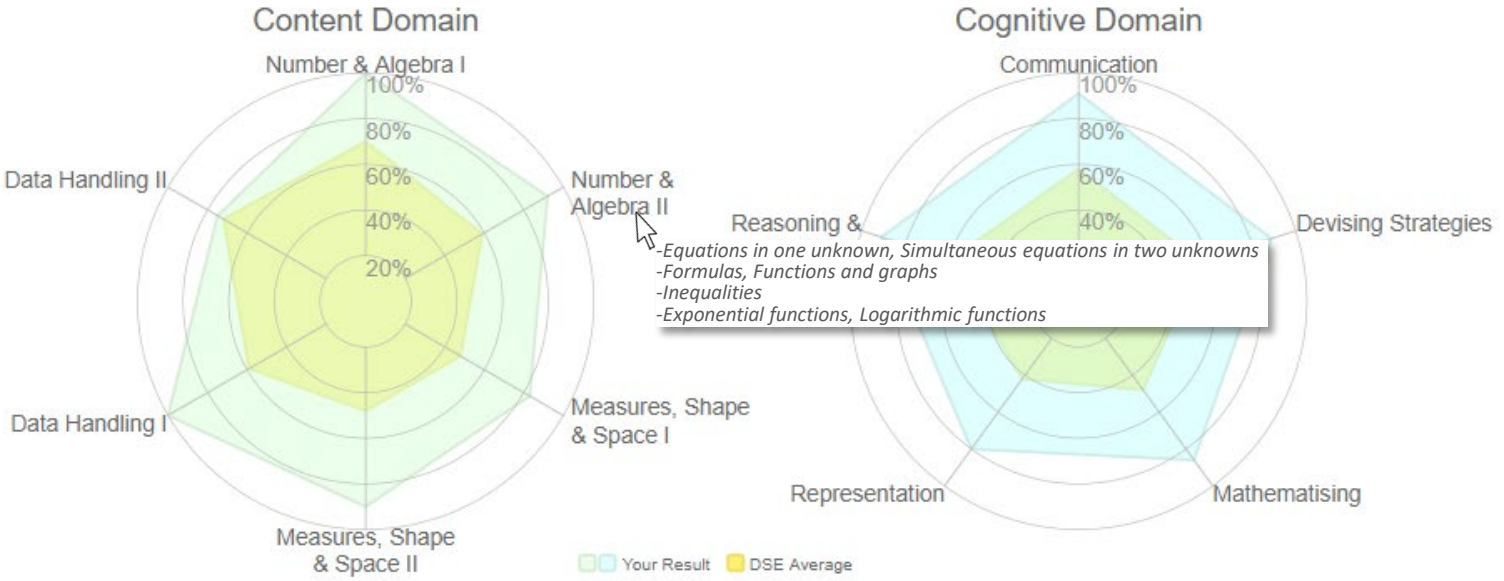
- Students are able to solve mathematical problems in familiar and some unfamiliar situations by devising simple strategy and applying relevant mathematical knowledge and concepts.

D

- Students are able to solve simple mathematical problems by performing straightforward or routine procedures according to clearly given numerical information, algebraic relationships, basic geometric properties, associated constraints and so on.

Estimation is based on multiple choice questions only.

Strength & Weakness



Paper Review

Paper Review Please use this function for review paper with item analysis, hints and answers.

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Diagnostic Feedback System

Paper Review

Wrong questions are listed below. Estimated avoidable mistakes are highlighted in blue.Questions with no response are highlighted in red.

37 *39* *41* *45*

Incorrect Question

Question 37 (DSE 2019 Q 37)

Content Domain : Number & Algebra II,Measures, Shape & Space II
Cognitive Domain : Strategy,Mathematising
Difficulty : B

Let k be a constant. The straight line $3x - y - 2 = 0$ and the circle $5x^2 + 5y^2 + kx + 4y - 20 = 0$ intersect at the points P and Q. If the x-coordinate of the mid-point of PQ is 2, find k.

A -152

B -52

C 148

D 248

Show Hints / Key Knowledge

Show Answer

Question 45 (DSE 2019 Q 45)

Content Domain : Data Handling II
Cognitive Domain : Communication,Strategy,Mathematising
Difficulty : C

The mean, the range and the variance of a set of numbers are m, r and v respectively. Each number of the set is multiplied by -6 and then 5 is added to each resulting number to form a

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Diagnostic Feedback System

Paper Review

Wrong questions are listed below. Estimated avoidable mistakes are highlighted in blue.Questions with no response are highlighted in red.

37 39 41 45

Incorrect Question

Question 37 (DSE 2019 Q 37)

Content Domain : Number & Algebra II,Measures, Shape & Space II
Cognitive Domain : Strategy,Mathematising
Difficulty : B

Let k be a constant. The straight line $3x - y - 2 = 0$ and the circle $5x^2 + 5y^2 + kx + 4y - 20 = 0$ intersect at the points P and Q. If the x-coordinate of the mid-point of PQ is 2, find k.

A −152

B −52

C 148

D 248

Show Hints / Key Knowledge

- Understand the possible intersection of a straight line and a circle
- Substitute the equation of the straight line into the equation of the circle
- Write the equation as a quadratic equation of x
- Find k using the relations between the roots and coefficients of the quadratic equation

Show Answer

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Diagnostic Feedback System

Paper Review

Wrong questions are listed below. Estimated avoidable mistakes are highlighted in blue.Questions with no response are highlighted in red.

37 *39* *41* *45*

Incorrect Question

Question 37 (DSE 2019 Q 37)

Content Domain : Number & Algebra II,Measures, Shape & Space II
Cognitive Domain : Strategy,Mathematising
Difficulty : B

Let k be a constant. The straight line $3x - y - 2 = 0$ and the circle $5x^2 + 5y^2 + kx + 4y - 20 = 0$ intersect at the points P and Q. If the x-coordinate of the mid-point of PQ is 2, find k.

A -152

B -52

C 148

D 248

Show Hints / Key Knowledge

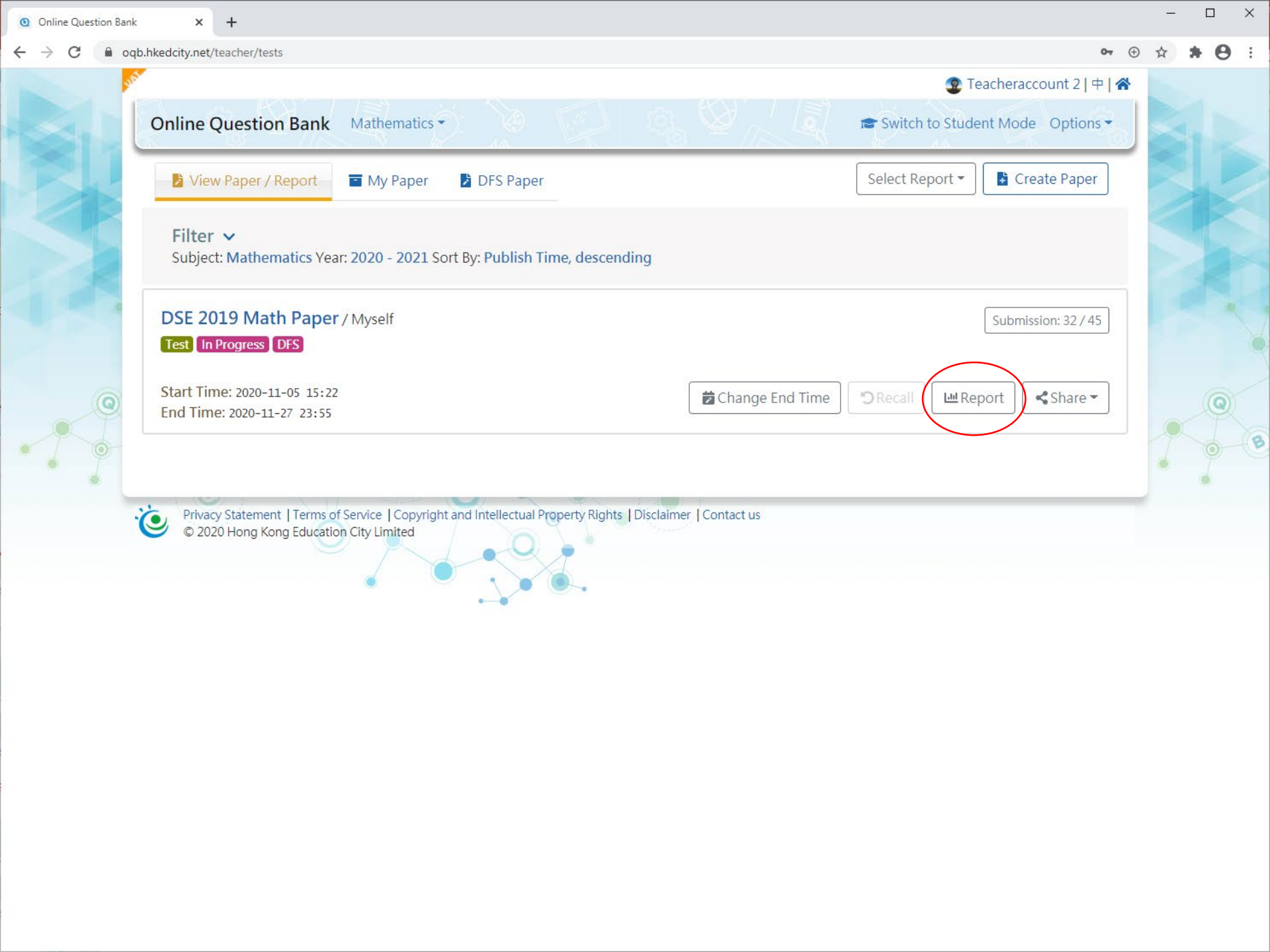
- Understand the possible intersection of a straight line and a circle
- Substitute the equation of the straight line into the equation of the circle
- Write the equation as a quadratic equation of x
- Find k using the relations between the roots and coefficients of the quadratic equation

Show Answer

Answer: A

Teacher Report

- Overall performance summary
- Student analysis
- Item analysis
- Paper review


Online Question Bank
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Teacheraccount 2 | 中 |
Online Question Bank
Mathematics
Switch to Student Mode
Options
View Paper / Report
My Paper
DFS Paper
Select Report
Create Paper
Filter
Subject: Mathematics Year: 2020 - 2021 Sort By: Publish Time, descending
DSE 2019 Math Paper / Myself
Test
In Progress
DFS
Submission: 32 / 45
Start Time: 2020-11-05 15:22
End Time: 2020-11-27 23:55
Change End Time
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DFS

Student Analysis | Item Analysis

Teacher Report

Summary

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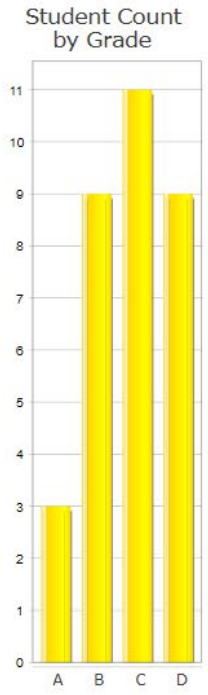

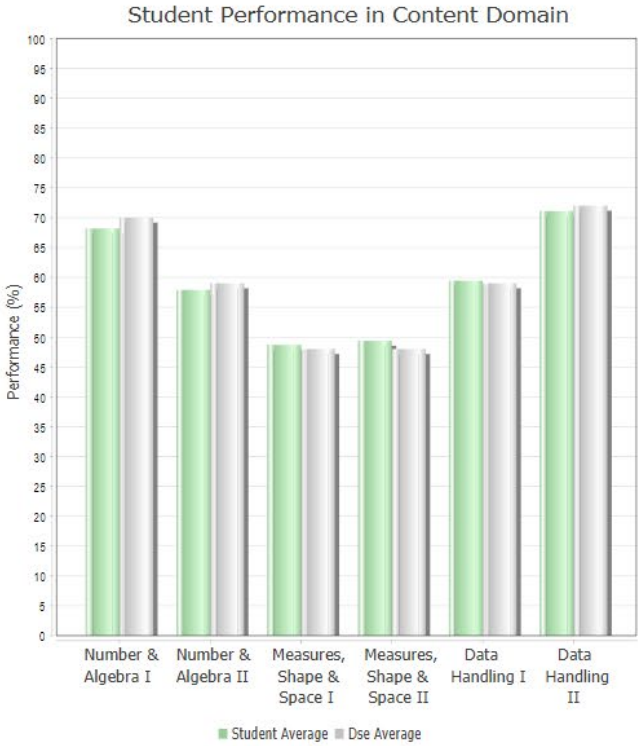

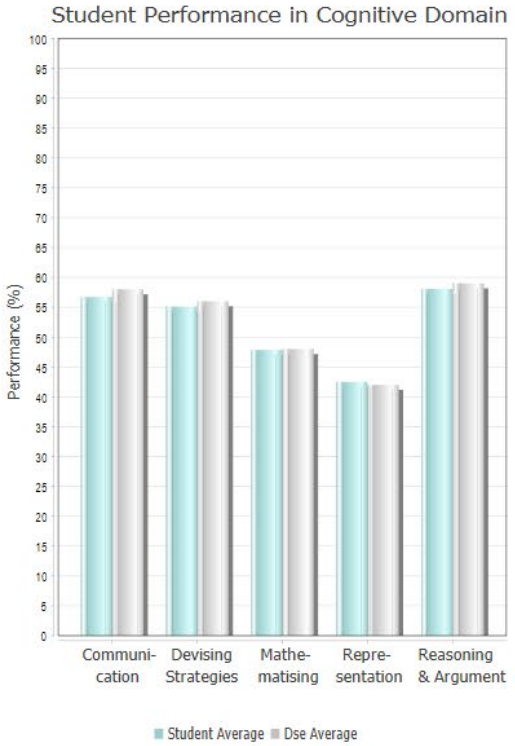

Paper Review

Paper Review *Please use this function for review paper with item analysis, hints and answers.*

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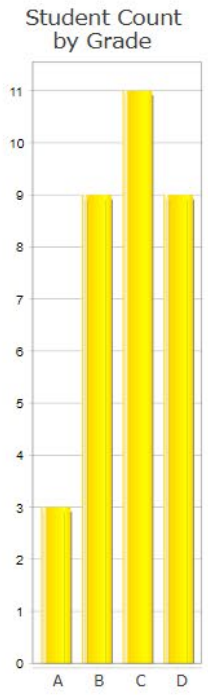
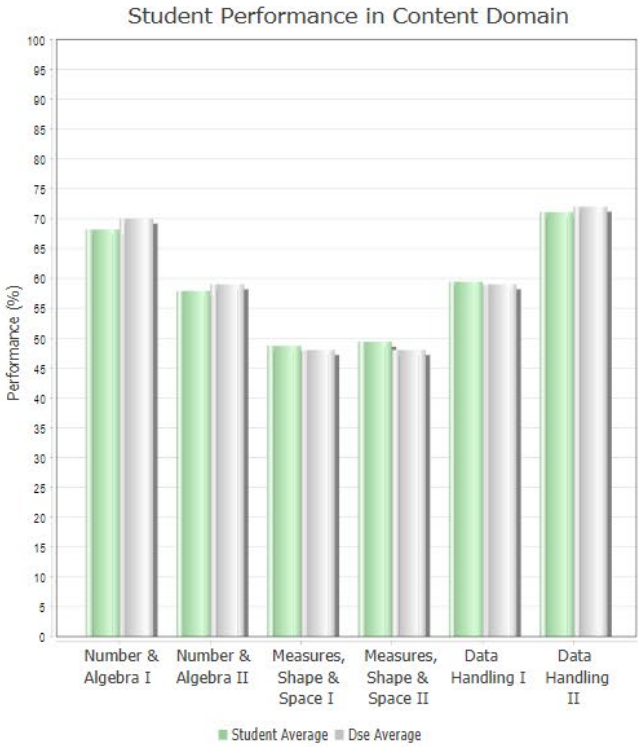
DFS

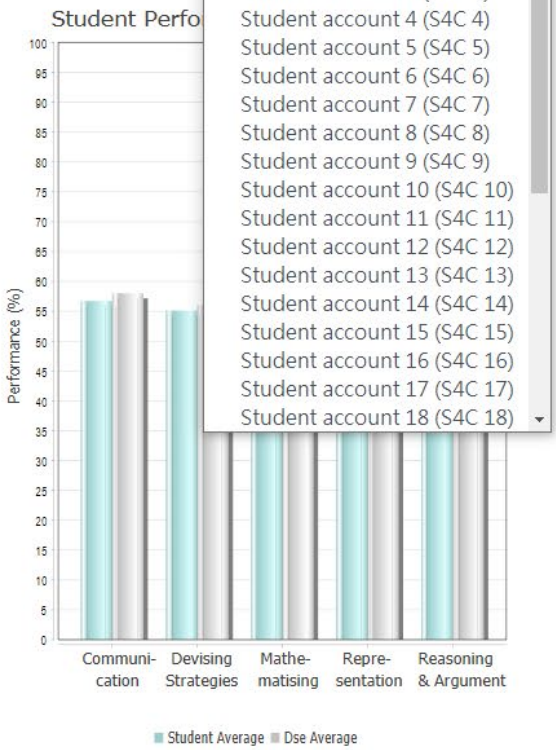
Student Analysis | Item Analysis

Teacher Report

Summary







Teacher Report
-- Student Reports --
Student account 1 (S4C 1)
Student account 2 (S4C 2)
Student account 3 (S4C 3)
Student account 4 (S4C 4)
Student account 5 (S4C 5)
Student account 6 (S4C 6)
Student account 7 (S4C 7)
Student account 8 (S4C 8)
Student account 9 (S4C 9)
Student account 10 (S4C 10)
Student account 11 (S4C 11)
Student account 12 (S4C 12)
Student account 13 (S4C 13)
Student account 14 (S4C 14)
Student account 15 (S4C 15)
Student account 16 (S4C 16)
Student account 17 (S4C 17)
Student account 18 (S4C 18)

Paper Review

Paper Review *Please use this function for review paper with item analysis, hints and answers.*

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Back to Teacher Report

Student account 2 (S4C 2)

Summary

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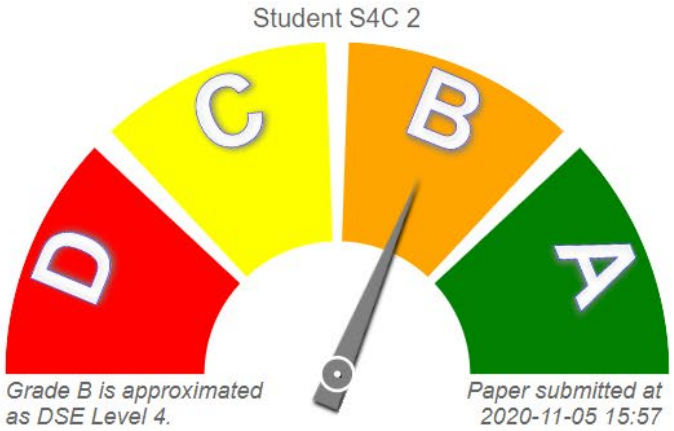
Estimated Grade



A
- Students have comprehensive knowledge and understanding of mathematical concepts in the curriculum.
- Students are able to solve mathematical problems of a wide range of unfamiliar situations. Students can use a variety of strategies to handle complex tasks and have the ability to make relevant arguments and mathematical reasoning.

B
- Students have sound knowledge and understanding of mathematical concepts in the curriculum.
- Students are able to solve mathematical problems of unfamiliar situations. Students can handle a range of tasks and have the ability to make relevant arguments.

C
- Students are able to solve mathematical problems in familiar and some unfamiliar situations by devising simple strategy and applying relevant mathematical knowledge and concepts.

D
- Students are able to solve simple mathematical problems by performing straightforward or routine procedures according to clearly given numerical information, algebraic relationships, basic geometric properties, associated constraints and so on.

Estimation is based on multiple choice questions only.

Strength & Weakness

Content Domain

Number & Algebra I
100%

Cognitive Domain

Communication
100%

DFS

Student Analysis | Item Analysis

Teacher Report

Summary

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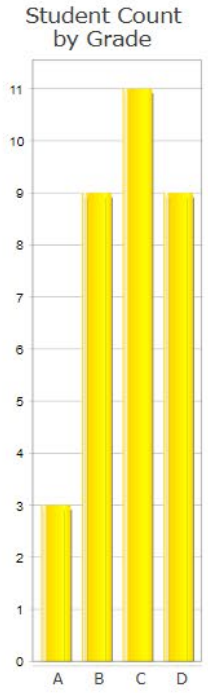

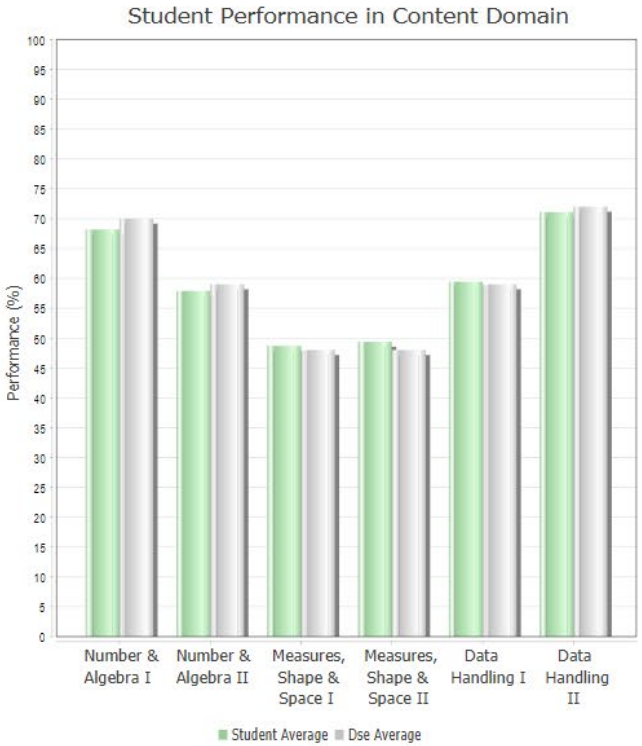

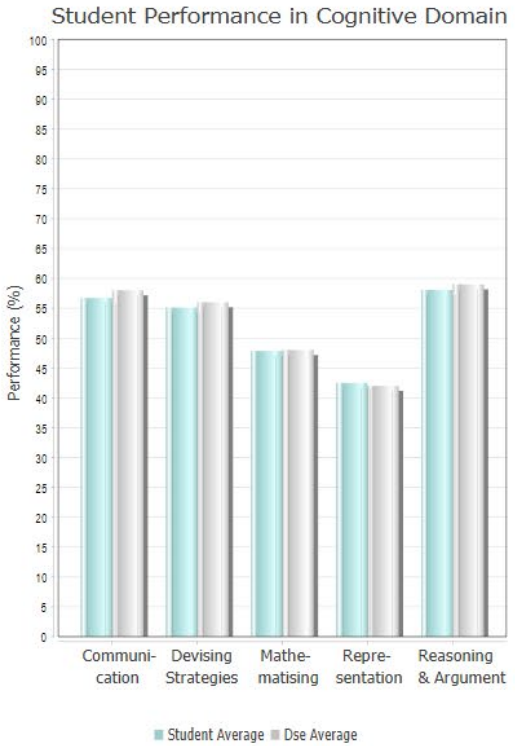

Paper Review

Paper Review *Please use this function for review paper with item analysis, hints and answers.*

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Student Analysis

Table Options | Download

Class	Class No.	Student Name	Total No. of Correct Answers (total 45 questions)	Score (%)	Number & Algebra I (%)	Number & Algebra II (%)	Measures, Shape & Space I (%)	Measures, Shape & Space II (%)	Data Handling I (%)	Data Handling II (%)	Communication (%)
S4C	1	Student account 1	36	80	83	75	92	50	100	75	80
S4C	2	Student account 2	32	71.1	100	67	58	60	67	75	71
S4C	3	Student account 3	25	55.6	50	42	58	50	67	75	54
S4C	4	Student account 4	29	64.4	75	75	42	30	67	100	63
S4C	5	Student account 5	45	100	100	100	100	100	100	100	100
S4C	6	Student account 6	27	60	67	50	42	60	67	75	54
S4C	7	Student account 7	31	68.9	75	75	67	40	67	75	66
S4C	8	Student account 8	26	57.8	92	67	33	30	0	100	54
S4C	9	Student account	35	77.8	83	67	75	80	100	100	80

Student Analysis | Item Analysis

Teacher Report

Student Analysis

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Search: Select filterable | Search by Keyword

Sort By: Class No.

Display: Class, Class No., Student Name, Total No. of Correct Answers (total 45 questions), Score (%), Number & Algebra I (%), Number & Algebra II (%), Measures, Shape & Space I (%), Measures, Shape & Space II (%), Data Handling I (%), Data Handling II (%), Communication (%), Strategy (%), Mathematising (%), Representation (%), Reasoning and Argument (%)

Class	Class No.	Student Name	Total No. of Correct Answers (total 45 questions)	Score (%)	Communication (%)	Strategy (%)	Mathematising (%)	Representation (%)	Reasoning and Argument (%)
S4C	1	Student account 1	36	80	80	81	71	80	80
S4C	2	Student account 2	32	71.1	71	67	43	40	70
S4C	3	Student account 3	25	55.6	54	56	43	20	55
S4C	4	Student account 4	29	64.4	63	58	43	40	64
S4C	5	Student account 5	45	100	100	100	100	100	100
S4C	6	Student account 6	27	60	54	58	71	60	59
S4C	7	Student account 7	31	68.9	66	64	57	60	68
S4C	8	Student account 8	26	57.8	54	53	43	20	57

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Item Analysis

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Paper Question No.	Year	DSE Question No.	Correct Response Rate (%)	Item Difficulty Level	Content Domain	Cognitive Domain
1	2019	1	69	D	Number & Algebra I	Strategy
2	2019	2	91	D	Number & Algebra I	Strategy
3	2019	3	84	D	Number & Algebra II	Strategy
4	2019	4	63	D	Number & Algebra I, Number & Algebra II	Communication, Strategy
5	2019	5	72	D	Number & Algebra II	Strategy
6	2019	6	81	D	Number & Algebra I, Number & Algebra II	Communication, Strategy
7	2019	7	63	D	Number & Algebra II	Strategy, Mathematising
8	2019	8	78	D	Number & Algebra I, Number & Algebra II	Strategy
9	2019	9	63	D	Number & Algebra I	Communication, Strategy, Mathematising
10	2019	10	59	D	Number & Algebra II	Communication, Strategy, Mathematising
11	2019	11	63	D	Number & Algebra I	Communication, Strategy, Mathematising
12	2019	12	66	D	Number & Algebra I	Communication, Strategy, Mathematising
13	2019	13	63	D	Number & Algebra I	Communication, Strategy, Mathematising
14	2019	14	81	D	Number & Algebra I	Communication, Strategy, Mathematising
15	2019	15	63	D	Measures, Shape & Space I	Communication, Strategy, Mathematising, Representation
16	2019	16	31	A	Measures, Shape & Space I	Communication, Strategy, Mathematising, Representation, Representation
17	2019	17	56	C	Measures, Shape & Space I	Communication, Strategy, Mathematising
18	2019	18	28	A	Measures, Shape & Space I	Communication, Strategy, Mathematising, Representation, Representation
19	2019	19	81	D	Measures, Shape & Space I	Communication, Strategy, Mathematising

DFS

Student Analysis | Item Analysis

Teacher Report

Summary

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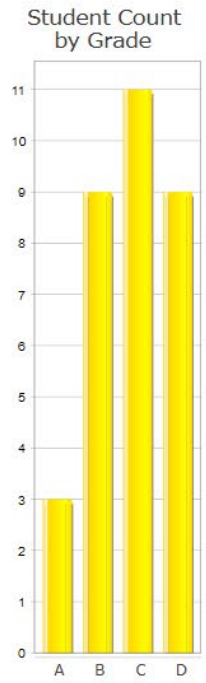

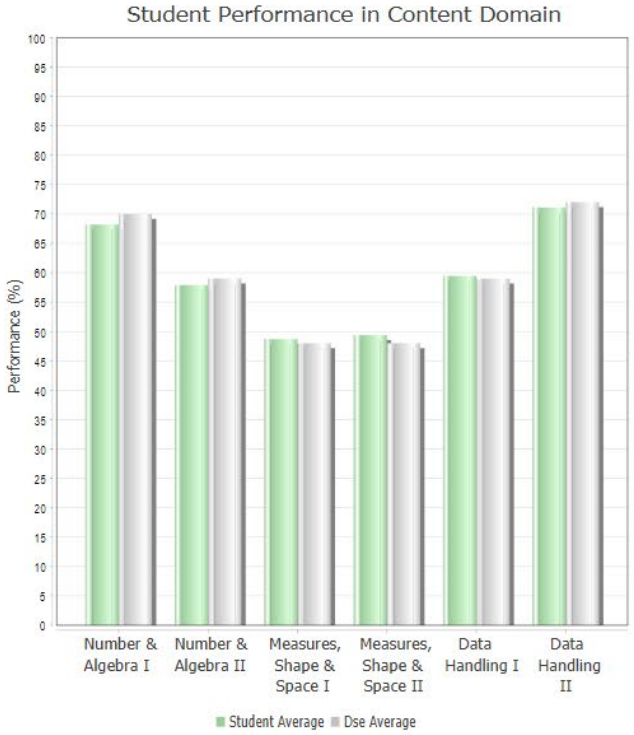

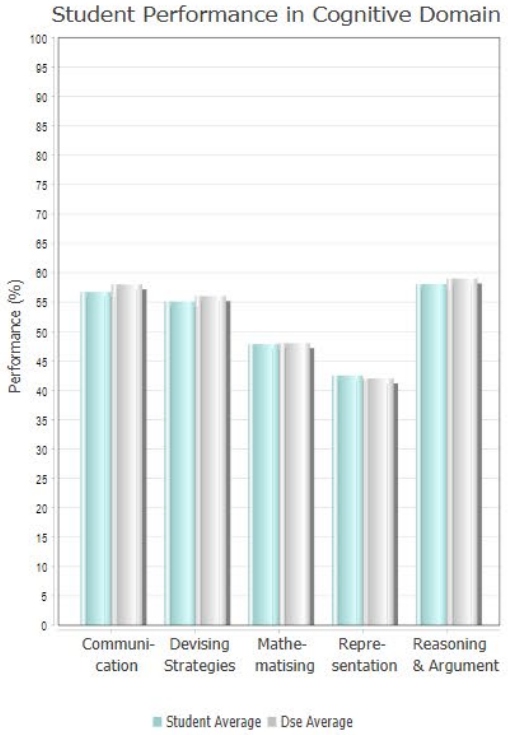

Paper Review

Paper Review *Please use this function for review paper with item analysis, hints and answers.*

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Diagnostic Feedback System

Paper Review

1 2 3 4 5 6 7 8 9 10
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41 42 43 44 45

Question 1 (DSE 2019 Q 1)

Content Domain: Number & Algebra I
Cognitive Domain: Strategy
Difficulty: D

$(a-b)(a^2+ab-b^2)=$

A $(a-b)^3$.

B a^3-b^3 .

C $a^3-2ab^2+b^3$.

D $a^3-2a^2b+2ab^2+b^3$.

Hints / Key Knowledge

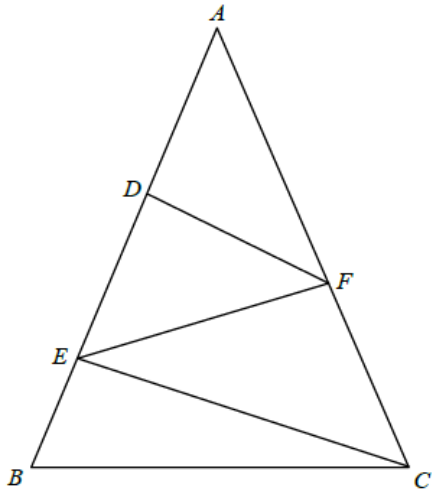
- Perform simple operations of polynomials

Answer: C

Question 18 (DSE 2019 Q 18)

Content Domain: Measures, Shape & Space I
Cognitive Domain: Communication,Strategy,Mathematising,Representation,Reasoning and Argument
Difficulty: A

In the figure, ABC is an isosceles triangle with $AB = AC$. D and E are points lying on AB such that $AD = DE = 2EB$ while F is a point lying on AC such that $DF // EC$. If $\angle ADF = 90°$ and $CE = 60$ cm, then $EF =$



A 40 cm.

B 45 cm.

C 48 cm.

D 50 cm.

Hints / Key Knowledge

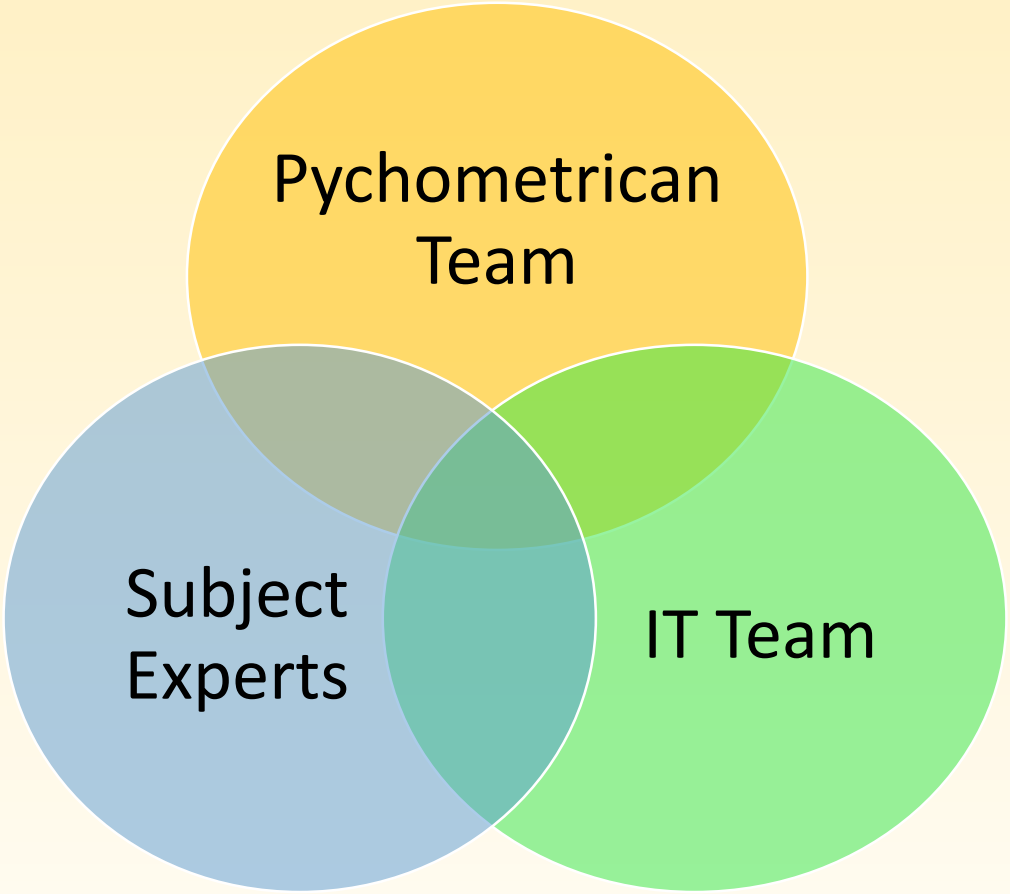
- Understand the mid-point theorem and the intercept theorem
- Understand the relations among the lengths of similar triangles
- Apply Pythagoras' theorem

Answer: D

Next Steps and Future Directions

- Pilot the system with a few schools
  - Collect feedback from teachers and students on system functions and report contents
- Extend to other subjects
- Further down the road
  - Allow more item formats
  - Make it adaptive

Multi-disciplinary Team



Thank you!