Summary

Test Identification	
Name	2019 MAT SW 2.4
Date Created	20 May 2019
Date Modified	12 Sep 2019
Subject	Mathematics
Status	SCORED
Sequence Number	924723
Total Test Time	57 minutes
Delivery Method	Onscreen

Curriculum Strand			
Number Sense & Operations	10	**Number Knowledge**	8
Statistics	10	**Algebra**	10

Curriculum Level					
3B	4	**3P**	5	**3A**	1
4B	15	**4P**	5	**4A**	14
5B	2	**5P**	2	**5A**	2

Cognitive Processing			
Surface	32	**Deep**	18

Slider Settings			
Strands		**Level**	
Number Knowledge	Most	**Level 4**	Most
Number Sense & Operations	Most		
Algebra	Most		
Statistics	Most		

Marking Guide : 2019 MAT SW 2.4

Q.No	Marking Key
1	d
2	d
3	b
4	b
5	c
6	d
7	c
8	400+120+7 OR 5 hundreds + 1 ten + 17 ones OR any correct equivalent 'Accept correct alternatives that sum to 527'
9	1482
10	b
11	c
12	d
13	c
14	a
15	d
16	d
17	c
18	d
19	d
20	b
21	b
22	c
23	c
24	a
25	b
26	c
27	c
28	b
29	c
30	c
31	d
32	c

Instructions

Underlined Questions e.g. **10** :Use teacher judgement. Give 1 if answer matches marking guide (unless otherwise instructed). For incorrect answers give 0 (zero).
All other Questions: Enter the response chosen by the student using letters. For example, 'a' for the first option; 'b' for the second option; 'c' for the third option and so on.
Questions Not Answered: Enter a dash (-).

Q.No	Marking Key
33	40 minutes
34	c
35	b
36	d
37	d
38	b
39	7
40	23
41	a
42	d
43	b
44	c
45	d
46	c
47	c
48	d
49	b
50	3, 5, 4, 1, 2 'all in order for one mark'

Instructions
Underlined Questions e.g. **10** :Use teacher judgement. Give 1 if answer matches marking guide (unless otherwise instructed). For incorrect answers give 0 (zero).
All other Questions: Enter the response chosen by the student using letters. For example, 'a' for the first option; 'b' for the second option; 'c' for the third option and so on.
Questions Not Answered: Enter a dash (-).

Choose a circle to show how much each sentence is like you	Very Unlike Me	Unlike Me	Like Me	Very Like Me
	1	2	3	4
01. I like maths at school.	⬭	⬭	⬭	⬭
02. I am good at maths.	⬭	⬭	⬭	⬭
03. My teacher thinks I am good at maths.	⬭	⬭	⬭	⬭
04. My Mum and Dad think I am good at maths.	⬭	⬭	⬭	⬭
05. I enjoy doing maths in my own time (not at school).	⬭	⬭	⬭	⬭
06. I enjoy doing things in maths that I haven't tried before.	⬭	⬭	⬭	⬭

Practice Questions

These practice questions are to help you understand how to show your answer for different types of questions.

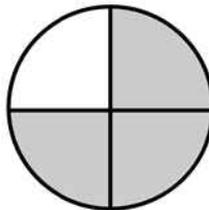**P01.** Who is holding a card with an even number on it?

◯ Ben

◯ Eru

◯ Aroha

◯ Davina

P02. Complete this number pattern.

2, 4, ____, ____, 10

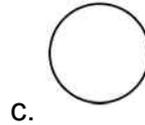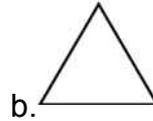**P03.** What fraction of this circle is shaded?

P04. Match the sentence with the correct shape.

☐   1. I have three sides

☐   2. I have 4 sides

a. ☐

b. △

c. ○

P05. Which numbers make this number sentence **TRUE**?

$$2 + ⭐ > 5$$

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

P06. Put the numbers 1, 2, 3, and 4 in the boxes to order these numbers from biggest (1) to smallest (4).

☐   3

☐   7

☐   2

☐   0

P07. Select whether the following statements are True or False.

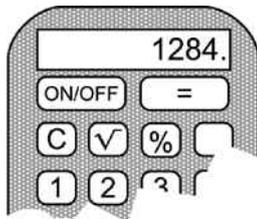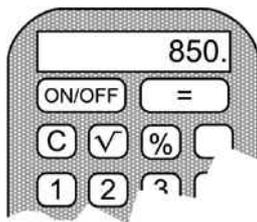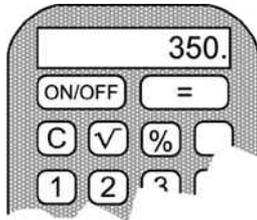|	TRUE	FALSE
In the number 213, the value of 1 is ten.	◯	◯
In the number 504, the value of 5 is fifty.	◯	◯

01. Year 4 collected more than 850 bottle caps for an art project. Year 5 collected more than 500 bottle caps.

Using her calculator, Maria found the exact total of all the bottle caps collected by both years.

Which calculator could be hers?

○
```
           350.
ON/OFF   =
C  V  %
1  2  3
```

○
```
           850.
ON/OFF   =
C  V  %
1  2  3
```

○
```
          1284.
ON/OFF   =
C  V  %
1  2  3
```

○
```
          1376.
ON/OFF   =
C  V  %
1  2  3
```

02. Which number is 20 thousand more than 582 375?

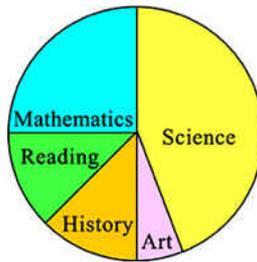○   582 395
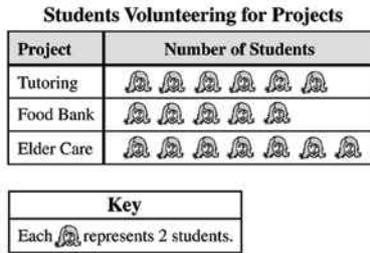
○   582 575

○   584 375

○   602 375

03. The pie chart below shows the portion of time Pat spent on homework in each subject last week.
If Pat spent 2 hours on mathematics, about how many hours did Pat spend on homework altogether?

- ◯   4
- ◯   8
- ◯   12
- ◯   16

04. The pictogram shown below displays the number of students who volunteered time for three projects.
Which chart below correctly lists the number of students who volunteered for each project?

Students Volunteering for Projects

Project	Number of Students
Tutoring	🐿 🐿 🐿 🐿 🐿 🐿
Food Bank	🐿 🐿 🐿 🐿 🐿
Elder Care	🐿 🐿 🐿 🐿 🐿 🐿 🐿

Key
Each 🐿 represents 2 students.

○
Students Volunteering for Projects

Project	Number of Students
Tutoring	6
Food Bank	5
Elder Care	7

○
Students Volunteering for Projects

Project	Number of Students
Tutoring	12
Food Bank	10
Elder Care	14

○
Students Volunteering for Projects

Project	Number of Students
Tutoring	10
Food Bank	9
Elder Care	12

○
Students Volunteering for Projects

Project	Number of Students
Tutoring	6
Food Bank	4
Elder Care	8

05. The temperature inside the ski lodge is 18ºC.
The temperature outside the lodge is 25ºC lower than inside.
What is the temperature outside?

○ 7ºC

○ 0ºC

○ -7ºC

○ -25ºC

06. Kiri conducted a survey. She asked every student in Year 9, "What is your favourite subject or activity at school?"

She recorded her results in the table.

Kiri decided to display her data in a strip graph, using the key below.

Which strip graph **BEST** represents Kiri's data?

Table Subject/Activity	No. of students
English	5
Maths	15
Sport	15
Lunch	5
Other	10

Key
- English
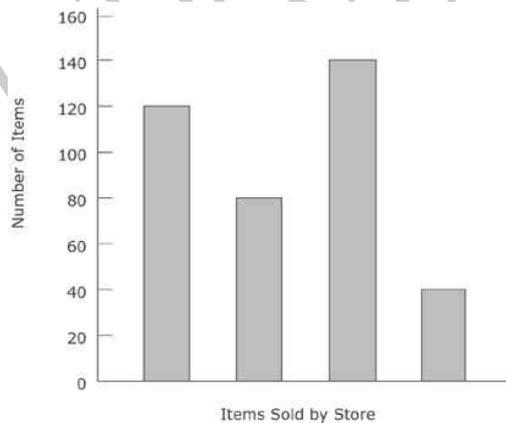- Maths
- Sport
- Lunch
- Other

- ◯
- ◯
- ◯
- ◯

07. The graph shows the number of pens, pencils, rulers, and erasers sold by a store in one week.

The names of the items are missing from the graph.

Pens were the items most often sold, and fewer erasers than any other item were sold.

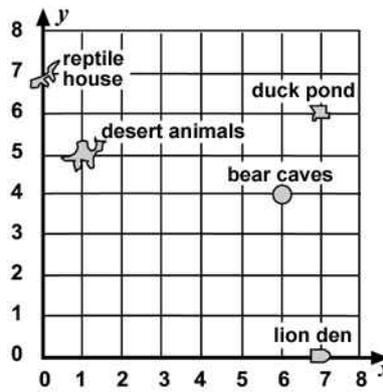More pencils than rulers were sold.

How many pencils were sold?

Number of Items vs Items Sold by Store

- ◯ 40
- ◯ 80
- ◯ 120
- ◯ 140

Use the following information to answer questions 08 to 09.

Two different ways of representing the number 527 are shown below.

527 = 500 + 20 + 7
527 = 4 hundreds + 11 tens + 17 ones

08. Show another way to represent 527.

527 =_____

09. One way of representing a number is shown below.
1 thousand + 3 hundreds + 18 tens + 2 ones

What is the number that is represented?

_____

End of Section

10. The chart below shows the number of points awarded for first, second, third, and fourth place.
Mr Hall's class came in first in the 50-metre dash, fourth in the 3-legged race, second in the obstacle course, first in the frisbee toss, and fourth in the water relay. There is one more event.
The class wants to reach a total score of 36 points.
What place do they need to win in order to reach their goal of 36 total points?

Place	Points
First Place	10
Second Place	7
Third Place	5
Fourth Place	2

⬭ Second place

⬭ Third place

⬭ Fourth place

⬭ They have already scored 36 points.

11. Last week Drew worked 7.9 hours. This week he worked 8.6 hours. How many more hours did he work this week than last week?

◯   1.7

◯   1.3

◯   0.7

◯   0.3

12. Which **BEST** describes the location of the duck pond in the figure below?
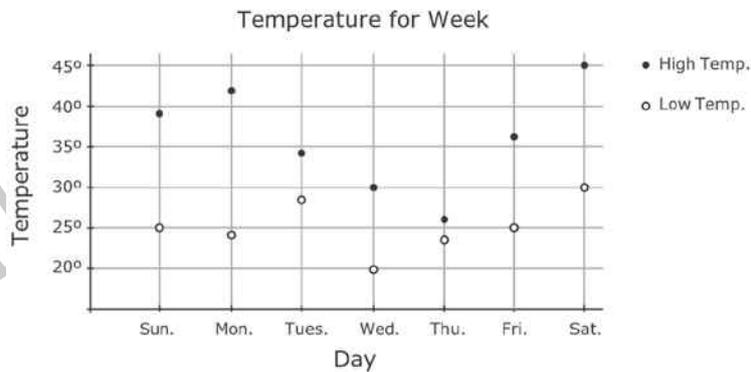

◯   (5, 6)

◯   (6, 7)

◯   (7, 0)

◯   (7, 6)

13. The table shows how many T-shirts of each colour Paul has in his closet.
If Paul chooses a T-shirt without looking, what is the probability that it will be blue?

Color	Number of Shirts
Green	3
Red	4
White	5
Blue	8
Total	20

○　　4%

○　　8%

○　　40%

○　　60%

14. The graph below shows the daily high and low temperatures for a week.
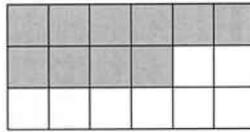On which day is the difference between the high and low temperatures greatest?

Temperature for Week

○　　Monday

○　　Thursday

○　　Friday

○　　Saturday

15. What would be the cost of 2 litres of ice cream and two boxes of ice cream cones?

$4.69 (Vanilla 1 litre)

$2.73 (12 cones)

- ⬭ $12.64
- ⬭ $12.84
- ⬭ $14.64
- ⬭ $14.84

16. Which circle has approximately the same fraction shaded as that of the rectangle below?

- ⬭
- ⬭
- ⬭
- ⬭
- ⬭

17. There are twelve teams in a volleyball competition. Each team plays each of the other eleven teams once. The Eagles have to play the Dodgers in the last round of the competition.

The Eagles have beaten seven of the ten teams they have played. The Dodgers have beaten two of the same ten teams.

The **BEST** word to describe the chance of the Eagles beating the Dodgers is

- ◯ certain.
- ◯ impossible.
- ◯ likely.
- ◯ unlikely.

18. A map has a scale of 1 centimetre = 3 kilometres.
What is the actual distance from Kennisport to Landley if the distance on the map is 3.5 centimetres?

- ◯ 1.2 km
- ◯ 3.5 km
- ◯ 6.5 km
- ◯ 10.5 km

19. Ms Collins' class finished some projects on Thursday and 14 projects on Friday. The class finished a total of 32 projects on those two days.
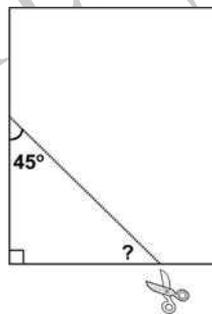Which of the following describes the number of projects, P, the class finished on Thursday?

- ◯ 32 x 14 = P
- ◯ P x 14 = 32
- ◯ 32 + 14 = P
- ◯ P + 14 = 32

20. According to the data in the graph, which would be the **MOST** reasonable prediction for the percent of households with CD-ROMs in their computers in 1998?

**U.S. Households With Computers
With Installed CD-ROM Drives, 1993-97**

- ⬭ 24%
- ⬭ 36%
- ⬭ 40%
- ⬭ 44%

21. Nina made a triangle by cutting the corner off a sheet of paper.
One angle is 45°.
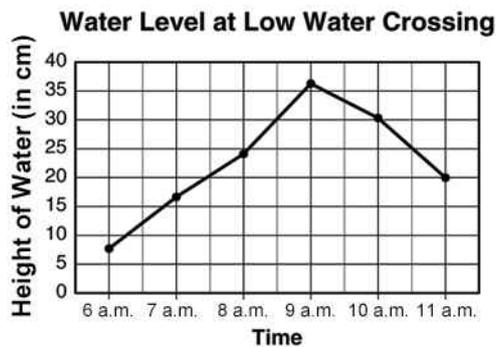What is the measure of the third angle of Nina's triangle?

- ⬭ 30°
- ⬭ 45°
- ⬭ 55°
- ⬭ 60°

22. Mano got 4 out of 5 questions correct in a maths quiz.
What percentage correct is this?

○   20%

○   40%

○   80%

○   90%

23. After a heavy rain storm, Mrs Mendez recorded the height of the water at a low water crossing. She used her data to make the graph below.
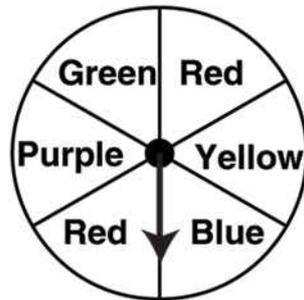Which is *closest* to the height of the water recorded at 6:30 am?

Water Level at Low Water Crossing

○   8 cm

○   10 cm

○   13 cm

○   15 cm

24. Kurt is wrapping a present for a friend. He can choose from 4 patterns of wrapping paper and 3 colours of ribbon. When he wraps the present, he will use 1 pattern of paper and 1 colour of ribbon.
How many different ways could he wrap the present?
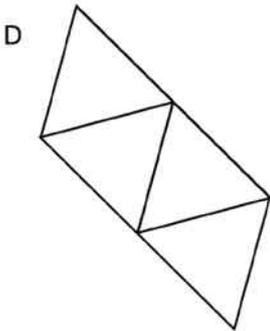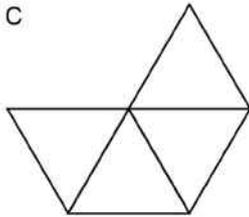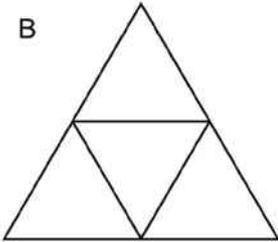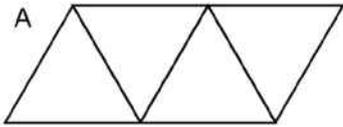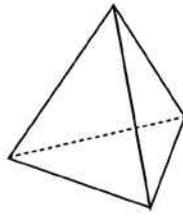
○   12

○   7

○   24

○   18

25. All the sections on the spinner below are the same size.
If the spinner is spun one time, what is the probability that the arrow will land on a space marked Red?

- ⬯ $\frac{2}{4}$
- ⬯ $\frac{2}{6}$
- ⬯ $\frac{1}{4}$
- ⬯ $\frac{1}{6}$

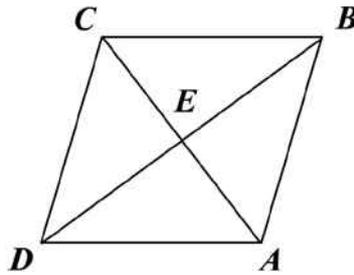**26.** Which net will **NOT** fold to make this tetrahedron?

A

B

C

D

27. In rhombus *ABCD*, *AC* = 30 centimetres and *BD* = 40 centimetres.
What is the perimeter of the rhombus?

- 25 cm
- 50 cm
- 100 cm
- 200 cm

28. The total land area for the United States is 3 537 438 square miles.
What is the value rounded to the nearest thousand square miles?

- 3 500 000
- 3 537 000
- 3 538 000
- 3 540 000

29. Simplify: $8y^2 - 3y - 5y + 2y^2$

- $8y^2 + 8y$
- $8y^2 - 8y$
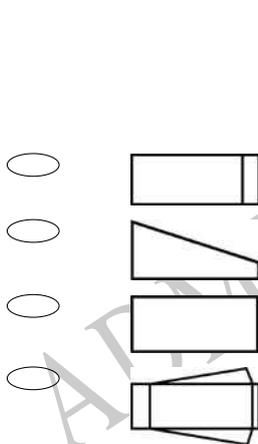- $10y^2 - 8y$
- $10y^2 - 10y$

30. The translation which moves the graph of $y = x^2$ to the graph of $y = x^2 - 3$ is

○   up 2.

○   down 2.

○   down 3.

○   up 3.

31. In which list are the numbers ordered from greatest to least?
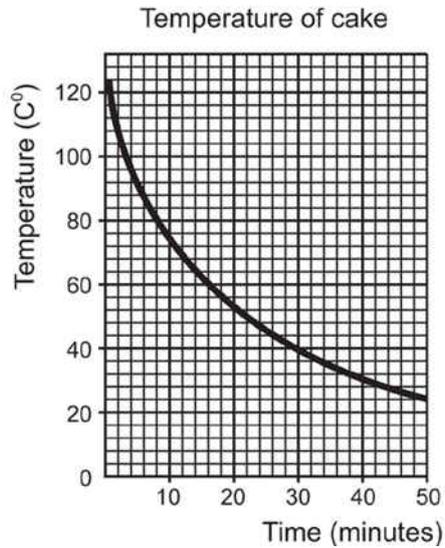
○   0.233, 0.3, 0.32, 0.332

○   0.3, 0.32, 0.332, 0.233

○   0.32, 0.233, 0.332, 0.3

○   0.332, 0.32, 0.3, 0.233

32. Which is a two-dimensional representation of the view from directly above the figure?

○

○

○

○

Use the following information to answer question33..

The graph below shows the temperature of a cake as it cools.

Temperature of cake

33. A cook cannot put icing on a cake until the cake cools to 30°C.

How long must the cook wait after taking the cake out of the oven before icing?

_____ minutes

End of Section

34. Working together, Joy and Steve collected 39 kilograms of aluminium cans for recycling.
If Joy collected j kilograms, which of the following shows the number of kilograms collected by Steve?

⬭ j + 39

⬭ j - 39

⬭   39 - j

⬭   39 j

35. The place value of the one in 9.103 is

○ ones

○ tenths

○ hundredths

○ thousandths

36. Ron wanted to find a rule for finding the terms in this sequence of numbers.
1, 2, 6, 24, . . .
He rewrote the first four terms this way.
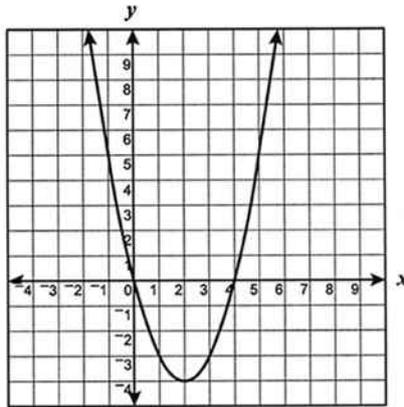1, 1×2, 1×2×3, 1×2×3×4
If Ron continues to write terms this way, what will be the sixth term in the sequence?

○ 216

○ 480

○ 600

○ 720

37. Which is equivalent to $9 - 2^3$?

○ 343

○ 4

○ 3

○ 1

38. Where does the quadratic graph cut the x axis?

⬭   (0 and -4)

⬭   (0 and 4)

⬭   (2 and 4)

⬭   (-2 and 4)

Use the following information to answer questions 39 to 40.

This stem-and-leaf graph shows the number of points a rugby league team scored in one season.

0	8
1	0, 2, 2, 3, 4, 6, 6, 8, 8, 8
2	0, 2, 4, 4, 4, 4, 4 ,9
3	0, 0, 4, 4, 4
4	2, 8,

39. In how many matches did the team score 30 or more points?

_____

40. What was the median score for the team?

_____

41. What is the value of $n^2 (m + s)$ if $m = 3$, $n = 2$, and $s = 4$?

- ⬭ 28
- ⬭ 16
- ⬭ 14
- ⬭ 9

42. Which is equivalent to $13 - 3^3$?

- ⬭ 7
- ⬭ 4
- ⬭ -10
- ⬭ -14

43. The chart shows the pizza menu for the local pizza parlour.
Which of the following shows the total number of ways Andy can buy a pizza with one topping?

Pizza		
Size	**Crust**	**Toppings**
Small Medium Large Extra Large	Thin Original Thick	Pepperoni Hamburger Cheese Sausage

○   4 + 3 x 4

○   4 x 3 x 4

○   (4 x 3) + (4 x 3)

○   (4 x 4) + 3

44. Two groups of tourists each have 60 people. To travel to a museum, $\frac{3}{4}$ of the first group and $\frac{2}{3}$ of the second group board the buses.
How many more people in the first group than in the second group board buses?

○   2

○   4

○   5

○   40

○   45

45. Which of the following is true?
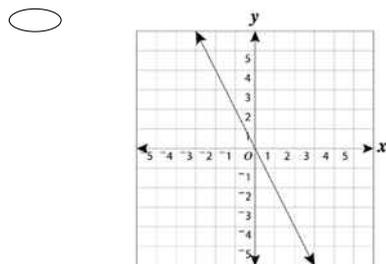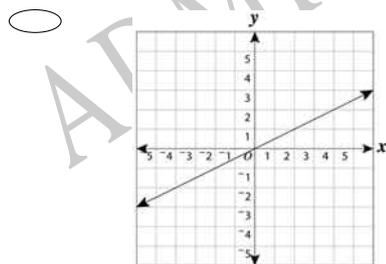
○ $\frac{1}{4} > 1\frac{1}{2}$

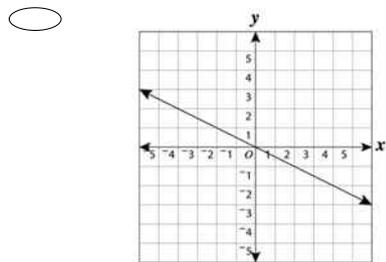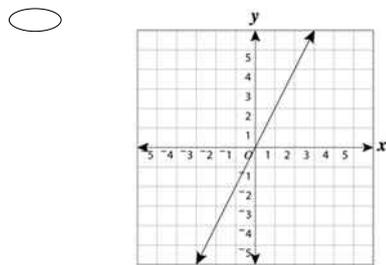○ $-4 < -5$

○ $-5\frac{1}{2} > 3\frac{1}{2}$

○ $-1 < -\frac{1}{2}$

46. Which is a graph of a line that contains all the points in this table of ordered pairs?

x	y
-4	-2
0	0
2	1

○

○

○

○

47. Soccer is the world's most popular sport. The table lists the records of five World Cup winners.

What was the mean number of total points scored by these teams?

Country	Games Won	Games Lost	Ties	Total Points
Argentina	24	15	9	57
Brazil	44	11	11	99
England	18	11	12	48
Italy	31	11	12	74
West Germany	39	14	15	93

- ◯ 51
- ◯ 74
- ◯ 74.2
- ◯ 99

48. Which of the following is equal to $6(x + 6)$?

- ◯ $x + 12$
- ◯ $6x + 6$
- ◯ $6x + 12$
- ◯ $6x + 36$
- ◯ $6x + 66$

49. Which means "the sum of 8 and 4 times a number is 36"?

- ◯ $8x + 4 = 36$
- ◯ $4x + 8 = 36$
- ◯ $4(x + 8) = 36$
- ◯ $4x = 36 + 8$

50. Put the numbers 1, 2, 3, 4 and 5 in the boxes to order the following fractions from the highest (1) to the lowest (5).

☐	$\frac{3}{4}$
☐	$\frac{3}{5}$
☐	$\frac{4}{6}$
☐	$\frac{7}{8}$
☐	$\frac{8}{10}$

Please provide these instructions to all staff involved with administering e-asTTle online.

Before the testing session

1. Make sure students have the right devices and browsers installed

Unsupported devices may result in the test not displaying correctly and affect students' scores.

Desktop/Laptop	Large Tablets (9"+)
• Windows, Mac or Chromebook • Minimum window width: 1280 pixels • Windows devices need up-to-date Edge, Chrome, Firefox or IE11 • Windows tablets/hybrids e.g., Surface Pro must have a keyboard attached • Mac devices need recent Chrome or Safari	• iPads: iOS 10+ with Safari • Androids: Large tablet e.g., Samsung Galaxy Tab 4. Must have Android 5+ and latest Chrome • Minimum window width: 768 pixels iPad Minis and small Androids must not be used.

More information on device requirements and the underlying rationale is available on the help site.

2. Sit the Practice Test

A practice test for each subject is available. These are also available in the Student Portal (no login required). Practice tests are designed to familiarise you and your students with e-asTTle online before sitting a real test. Each practice test contains attitude questions, look-over time and 5-8 questions designed to be relatively simple to answer. Teacher scripts are available for practice tests.

3. Ensure you have student login information

More information on accessing student logins and resetting passwords is available on the help site.

4. Check if calculators are required (Maths/Pāngarau)

Tests with questions at mostly Level 5 and 6 require the use of calculators. Tests with questions at mostly Levels 2 to 4 do NOT require a calculator.

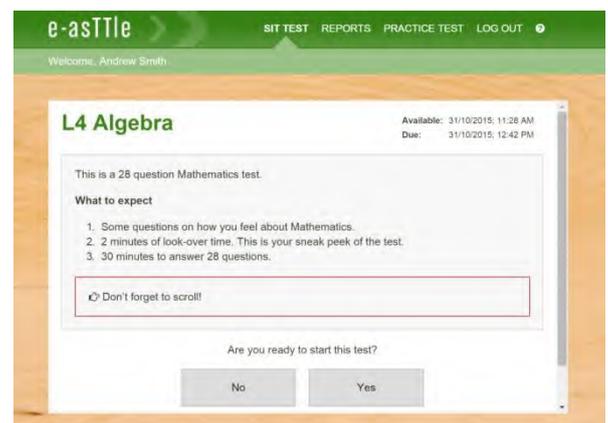## During the testing session

1. Check equipment

• Make sure students' devices are charged.
• Make sure students have scrap paper and a pen/pencil for working, calculators (if needed) and a quiet activity they can continue with if they finish early.

2. Read the Test Details to students

Once students select a test, they will see the test details page (example shown on right).

Read through this page aloud with your students.

Other reminders to discuss with students:

- Once they choose 'Yes', the timer starts. Once the timer is counting down, there is no way to pause the test. If students close the test accidentally, they can re-open it again, provided the timer hasn't finished.
- Ask students to raise their hand if something seems wrong.
- Fullscreen mode is recommended.

For students on iPad or Android tablet devices: remind them to lock their device in portrait mode.

For students on Windows hybrid devices (such as the Surface Pro): remind them to keep the keyboard attached during the test.

3. Supervising the test

Make sure you walk around and monitor students during the test. Students tend to continue with their test even if something has gone wrong – for example, a question does not display correctly. For this reason, check that pages are loading correctly, and students are scrolling to see all the content and options. It's a good idea to have a paper booklet of the test available during the testing session.

Students are generally expected to read the test content without assistance. Information on accommodations (e.g., reader-writers) is available on the help site.

4. Know what to do if things go wrong

Internet disconnected

If student answers aren't saving, e-asTTle will show a yellow banner at the top of the page. The banner will turn red when there has been disconnection for 2 minutes or more. Students can keep answering whatever they can, and e-asTTle will try and save answers. Don't refresh or close the window if a coloured banner is showing.

3 answers still saving...You can keep going.
34:50 test time left	Question 4 of 30

If the Internet has been down, use your professional judgement to decide if students' results should be excluded.

Images not loading

If an image is missing, students will see an icon they can click to try and reload the image.

A question doesn't load fully or looks strange

If something has loaded incorrectly, it can sometimes be corrected by selecting the 'Next' button then the 'Previous' button to reload the question.

Detailed troubleshooting information is available on the help site. To report issues with online testing or for additional assistance, please contact the Education Service Desk: 0800 225 5428.