

Summary

Test Identification

Name	2019 MAT SW 1.3(P)
Date Created	02 Feb 2019
Date Modified	01 Mar 2019
Subject	Mathematics
Status	SCORED
Sequence Number	892963
Total Test Time	50 minutes
Delivery Method	Paper

Curriculum Strand

Number Sense & Operations	13	Number Knowledge	9
Statistics	10	Algebra	11

Curriculum Level

2B	1	2P	3	2A	9
3B	5	3P	15	3A	15
4B	1	4P	0	4A	1

Cognitive Processing

Surface	35	Deep	15
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Slider Settings

Strands		Level	
Number Knowledge	Some	Level 3	Most
Number Sense & Operations	Many		
Algebra	Some		
Statistics	Some		

Marking Guide : 2019 MAT SW 1.3(P)

Q.No	Marking Key
1	b
2	d
3	c
4	a
5	c
6	b
7	a
8	c
9	a
10	d
11	d
12	c
13	c
14	e
15	b
16	d
17	a
18	b
19	b
20	b
21	true
22	false
23	true
24	b
25	b
26	a
27	c
28	d
29	b
30	d
31	One-quarter or equivalent
32	One half (or equivalent) at slide; one quarter (or equivalent) on swings 'Both required for 1 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 (-).

Q.No	Marking Key
33	a
34	c
35	c
36	a
37	c
38	a
39	d
40	a
41	a
42	c
43	c
44	c
45	c
46	b
47	a
48	c
49	a
50	More exercise, less cholesterol, OR, less exercise, more cholesterol, OR equivalent

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 (-).

e-asTTle Mathematics

Administration Guidelines and Instructions: Paper Tests

Use of e-asTTle materials is based on an understanding of good assessment practices, principles, and philosophy. This document will guide you in making the best use of the e-asTTle assessment tools.

1. Valid assessment depends on your ensuring there is a good fit between what you teach and what you assess. That means you choose curriculum content and difficulty appropriate to the teaching programme you are going to implement, or have implemented with your students. e-asTTle allows you to specify curriculum content and difficulty. If the assessment generated by e-asTTle does not meet your expectations, you can revise the e-asTTle assessment. It is important to note that the creation of an e-asTTle assessment can be undertaken at any time (i.e., before the unit is taught, during, or at the end). It is important for the meaningfulness of the results that you do not 'teach' the specific items to the students.
2. Once you have prepared an assessment from e-asTTle, familiarise yourself with the assessment, the marking guide, and the procedures for administering the test. The more familiar you are, the easier it will be to interpret the information in a valid manner. Meaningful interpretations can only be made if e-asTTle instructions are followed appropriately.
3. It is important that students are aware of what is happening to them. They should know (a) what kind of assessment will be used (including question types, length, and timing), and (b) why they are doing the assessment. A **practice** set of tasks is always provided that will assist in this familiarisation.
4. The e-asTTle tasks should be appropriate for all students who are to be, or have been taught the regular classroom programme at the Curriculum Level for which the assessment is designed.
5. Some students (e.g., students with identified learning needs) may be entitled to accommodations (e.g., more time, a reader-writer) in completing the assessment. Please make the appropriate provisions for such students both in the administration and in your interpretations of the results.
5. It is important that the assessment is administered, scored, and data entered according to the standardised procedures in this document. Only then can you make valid interpretations of the performance of your students.
6. Once assessment scores are entered into e-asTTle, you will be aided in the interpretation of the meaning of the scores. You can analyse the scores of individuals and/or the whole class or group you assessed in a variety of ways. Performance can be interpreted by describing the nature of student achievement in terms of curriculum functions, processes, levels, or cognitive functioning. Student performance can be understood by comparison to the achievement of others, and through the progress report, by comparison with the students own previous performance. It is not possible, however, to construct any type of league tables from e-asTTle.
7. You can obtain a description of the curriculum content that students have yet to achieve, have unexpected strengths or weaknesses in, and those they have achieved. Further, the curriculum level of student performance can be identified by major curriculum content areas in your assessment. Progress trends are possible if you administer e-asTTle assessments over a period of time to the same students. By comparing your students with the New Zealand norm population performance, it is possible to identify those whose strengths or weaknesses are extreme (i.e., much higher or lower than the average child). It is also possible to compare your students performance to that of sub-populations defined by student or school characteristics. e-asTTle will help you choose outputs that you will

- find helpful in the teaching and learning process, and will guide you to further resources in the curricula areas that you have chosen to assess.
8. Remember that e-asTTle assessments provide a one-off snapshot of student achievement. Once you have interpreted the meaning of the e-asTTle scores, you should triangulate with other information you have already obtained from other assessments such as observation, class work, or other diagnostic tools. You need to exercise your professional judgement in determining whether the e-asTTle interpretation supports or challenges what you already know about an individual student or group of students. This may mean you have to collect some more data to determine if interpretations are valid or appropriate. For example, you will want to know if a gap was because of lack of knowledge or ability, to poor physical or emotional health on the day, or to insufficient teaching of the curricula areas.
 9. Once you have interpreted and evaluated the information provided by e-asTTle, you may want to put it to use in your instructional programme. You may wish to (a) change the content of what you teach, (b) alter your teaching methods, or (c) refer to the web sites indicated via the e-asTTle What next for further teaching aids.
 10. You may want to record and report the e-asTTle results, the interpretation you made, and your instructional response so that you can better communicate with your fellow teachers and mentors, the parents of your students, your colleagues, and your students. e-asTTle records the results and provides a range of useful reports that you may want to print off to enable such communication. This information can also be exported to school management systems.
 11. Should you require further guidance in understanding or using these recommendations, assistance can be found under the HELP section of e-

asTTle, on the e-asTTle website (on the internet at <http://e-asTTle.tki.org.nz>), from your local Assessment to Learn (AtoL) professional development provider, or from the Ministry of Education Sector Service Desk (Tel: 0800 225 5428, then select Option 2 for e-asTTle).

Special Instructions:

e-asTTle Mathematics tests are designed to take between 12 and 60 minutes. This does not include the time taken for filling in the demographic page, the cover, or the practice questions. For longer tests (say, 40 minutes or more), it may be advisable to break the time allowed into two separate sessions. If this is done, do not allow students to review questions answered in the first session. A blank page inserted into the script about half way through will act as a marker for this purpose. As this is a deviation from the normal procedure, teachers should take this into account when interpreting the results.

Equipment: Ensure students have access to rulers, pencils, erasers, compasses, and protractors. e-asTTle Mathematics tests for Levels 2 to 4 DO NOT require calculators. Tests that include Levels 5 and 6 DO require the use of calculators.

Answer Images: A number of questions require complex answers that cannot be easily described. A set of drawn answer images will be inserted in the Marking Guide where appropriate.

Image Accuracy

The e-asTTle materials have been designed to be of a fixed size for both onscreen and paper delivery. Sometimes, the browser you use, the printer and Acrobat settings can change the size of images. There are a number of items that require students to measure accurately. Use the calibration guide below (Figure 1) to be sure that e-asTTle images are being printed at the correct size.

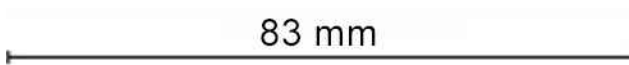
If your printer does not render the images on the test calibration page at the required sizes then you should seek assistance with your printing before administering an e-asTTle test. If this does not produce the image correctly sized, you will have to measure the image as printed yourself, and use the Marking Guide as an indication of the degree



of accuracy expected, and mark the students accordingly.

Acrobat Reader Print Settings: You must switch off any settings in the print dialog box that may expand or shrink the artwork when you print your test. When printed check measurements against the image below.

Figure 1



Mathematics

First Name

Last Name

School Name

Room Number / Class

Choose a circle to show how much each sentence is like you

Very Unlike Me 1	Unlike Me 2	Like Me 3	Very Like Me 4
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01. It is very important to me to be good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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02. I try to get more maths answers right than my friends.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------

03. I like hard, challenging maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------

04. I do as much school work as possible in maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------

05. I like to help my friends with their maths school work.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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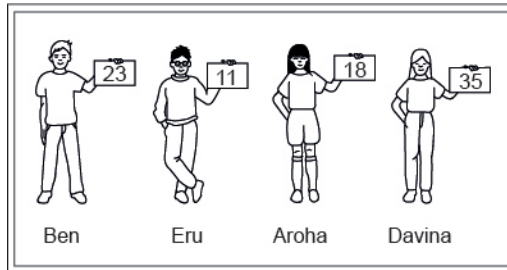
06. I like it when the maths examples are hard.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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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?

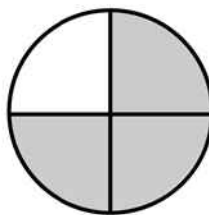


- Ben
- Eru
- Aroha
- Davina

P02. Complete this number pattern.

2, 4, _____, _____, 10

P03. What fraction of this circle is shaded?





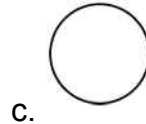
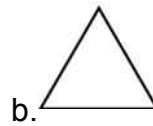
P04. Match the sentence with the correct shape.



1. I have three sides



2. I have 4 sides



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

$$2 + \star > 5$$

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.

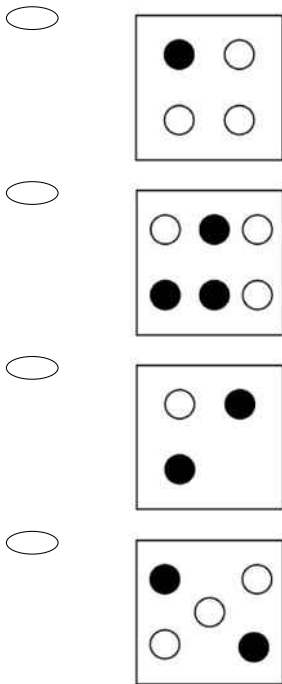
In the number 213, the value of 1 is ten.

TRUE

FALSE

In the number 504, the value of 5 is fifty.

01. In which figure are one-half of the dots black?



02. Jonah conducted a survey of vehicles going past his school one Friday morning between 8:30 am and 9:00 am.

This survey tells us that between 8:30 am and 9:00 am

Cars	
Buses	
Vans	
Trucks	
Motor bikes	

- cars are the slowest form of transport.
- fewer cars use the road than any other vehicles.
- cars are more reliable than trucks for deliveries.
- cars are the most common form of transport.

03. Which of the following is **closest** to 15 seconds?

- 14.1 seconds
- 14.7 seconds
- 14.9 seconds
- 15.2 seconds

04. The students in Ms Ruiz's class rolled a colour cube 100 times. The results are shown in the table below.

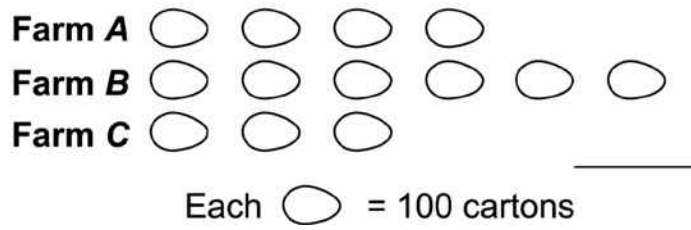
Which of the following is **TRUE** of the results?

Results					
Blue	Red	Green	White	Yellow	Purple

- The cube landed on green 16 times and on purple 18 times.
- The cube landed on red 9 times and on yellow 20 times.
- The cube landed on blue 15 times and on white 12 times.
- The cube landed on white 22 times and yellow 20 times.

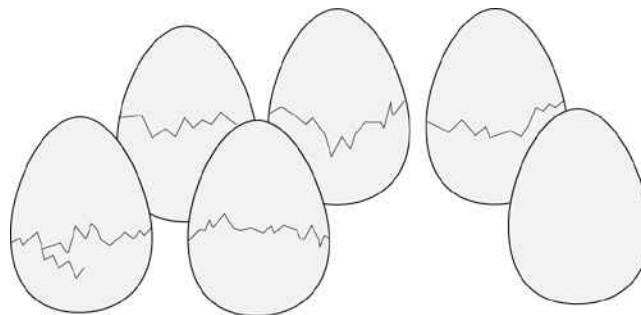
05. According to the graph, how many cartons of eggs were sold altogether by farms A, B, and C last month?

CARTONS OF EGGS SOLD LAST MONTH



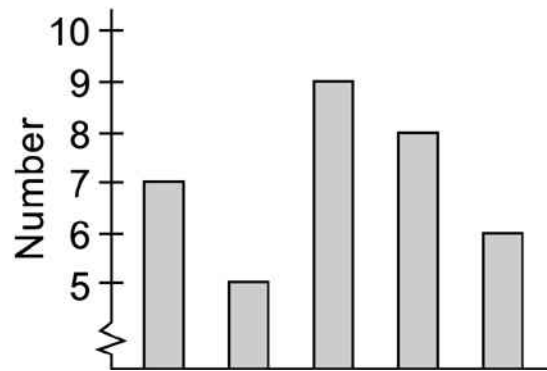
- 13
- 130
- 1300
- 13 000

06. What fraction of the group of eggs is cracked?



- $\frac{1}{6}$
- $\frac{5}{6}$
- $\frac{5}{1}$
- $\frac{6}{5}$

07. Jim made the graph below.
Which of these could be the title for the graph?



- Number of students who walked to school on Monday to Friday
- Number of dogs in five states
- Number of bottles collected by three students
- Number of students in ten clubs

08. Which of the following decimal lists is in order from **least** to **greatest**?

- 3.5, 3.1, 2.9, 2.4
- 2.9, 3.5, 2.4, 3.1
- 2.4, 2.9, 3.1, 3.5
- 3.1, 2.4, 3.5, 2.9

09. The chart shows the number of eggs produced on a farm in the first five months of the year. Which of the following statements is true?

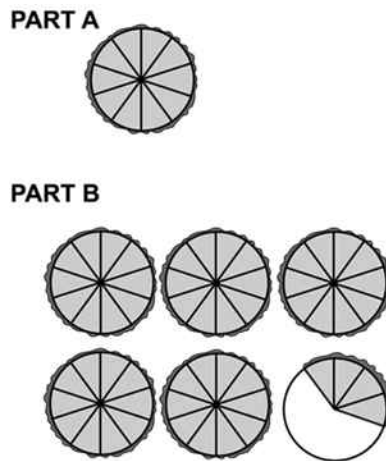
Month	Number of Eggs
January	5961
February	4228
March	5879
April	4907
May	5164

- The number of eggs produced in May was less than in March.
- The number of eggs produced in April was less than in February.
- The number of eggs produced in January was less than in March.
- The number of eggs produced in March was less than in May.

10. Which of these shows 642 in expanded notation?

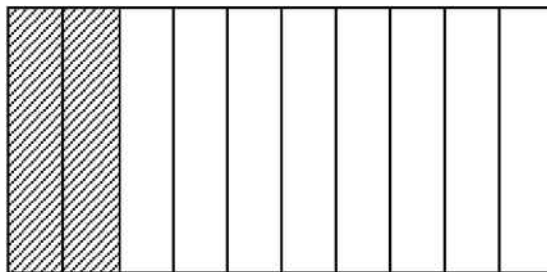
- $640 + 2$
- $600 + 42$
- $600 + 20 + 4$
- $600 + 40 + 2$

11. Part A represents 1 pie.
Which number is represented by Part B?



- 0.45
- 0.54
- 4.5
- 5.4

12. Which decimal represents the shaded part of the figure?



- 0.5
- 0.28
- 0.2
- 0.02



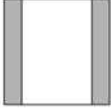
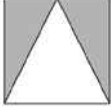
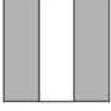
13. The rule for the table is that numbers in each row and column must add up to the same number.

What number goes in the centre of the table?

4	11	6
9		5
8	3	10

- 1
- 2
- 7
- 12

14. Which shows $\frac{2}{3}$ of the square shaded?

- 
- 
- 
- 
- 

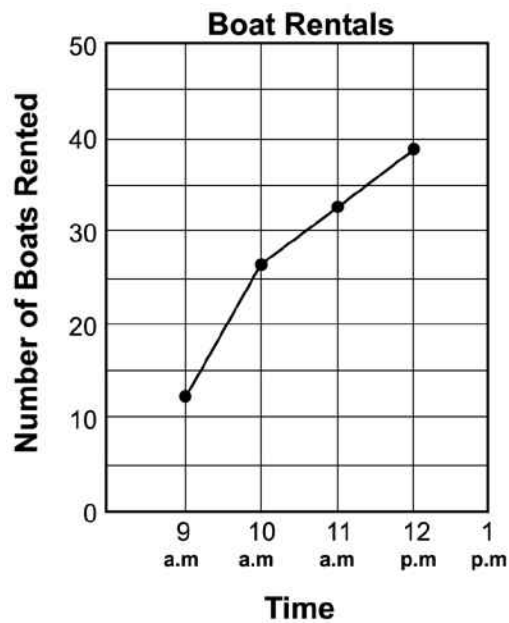
15. A teacher divides a whole class into groups to work on a class project. Each group has one-sixth of all the children in the class.

How many groups are there?

- 2
- 6
- 7
- 12

16. Mr Billings rents boats at Marsh Lake. The line graph below shows how the number of boats being used changed over a three-hour period.

Which is **closest** to the number of boats that were being used at 10 am?



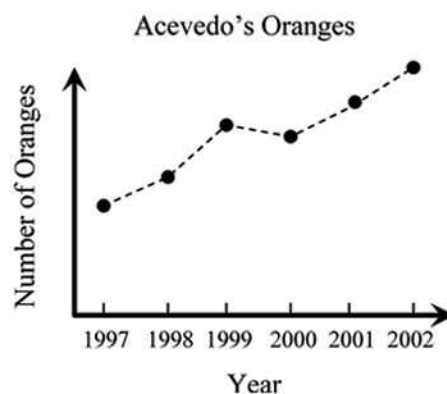
- 5
- 16
- 21
- 26

17. Adele used a rule to complete the Input-Output table shown below. Which of the following rules did Adele use?

Input	1	3	5	7
Output	5	15	25	35

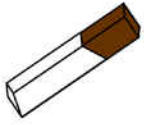


- Multiply the input by 5
- Divide the input by 5
- Add 4 to the input
- Subtract 4 from the input

18. The graph below shows the number of oranges harvested from the Acevedo's orange tree over a 6-year period. Which of the following is a correct conclusion about the graph?



- Fewer oranges were harvested in 2002 than in 1997.
- More oranges were harvested in 2001 than in 1998.
- The number of oranges harvested increased every year.
- The number of oranges harvested decreased from 2000 to 2001.

19. The picture below shows the cost of some items at the candy store. Omar bought 1 candy bar, 1 pack of gum, and 1 piece of hard candy. What is the total amount of money Omar spent?

candy bar	gum	licorice	hard candy
			
\$1.00	\$0.50	\$0.25	\$0.15

- \$1.50
- \$1.65
- \$1.75
- \$1.90

20. Mrs Hunter has a box with 5 unsharpened pencils and 30 sharpened pencils. If she takes out 1 pencil without looking, what are the chances that the pencil she gets will be sharpened?

- Certain
- Likely but not certain
- Unlikely but not impossible
- Impossible

Use the following information to answer questions 21 to 23.

A class was asked to insert the correct symbol ($=$, $<$ or $>$) in the equations below to make them correct.

Select those that are TRUE and those that are FALSE.

21.

$$6 \div 2 = 6 \times \frac{1}{2}$$

TRUE

FALSE

22.

$7 \times 3 < 20$

TRUE

FALSE

23.

$8 - 4 + 2 > 4 \div 1$

TRUE

FALSE

End of Section

24. $\frac{4}{6} - \frac{1}{6} =$

3

$\frac{3}{6}$

$\frac{3}{0}$

$\frac{5}{6}$

25. Which of these can be used to check the answer to the problem below?

$$4 + 3 = 7$$

$7 + 3 = 10$

$7 - 4 = 3$

$2 + 5 = 7$

$10 - 3 = 7$

26. Joan needs \$60 for a class trip.

She has \$32. She can earn \$4 an hour mowing lawns.

If the equation shows this relationship, how many hours must Joan work to have the money she needs?

$$4h + 32 = 60$$

- 7 hours
- 17 hours
- 23 hours
- 28 hours

27. Which one of the following is the same as $\frac{1}{4}$ of 20?

- $\frac{1}{5}$ of 30
- $\frac{1}{3}$ of 18
- $\frac{1}{5}$ of 25
- $\frac{1}{10}$ of 90

28. A certain map uses a scale of 1 centimetre equals 25 kilometres.

How many kilometres are represented by 5 centimetres on this map?

- 5
- 25
- 50
- 125

29. What number should go in the box?

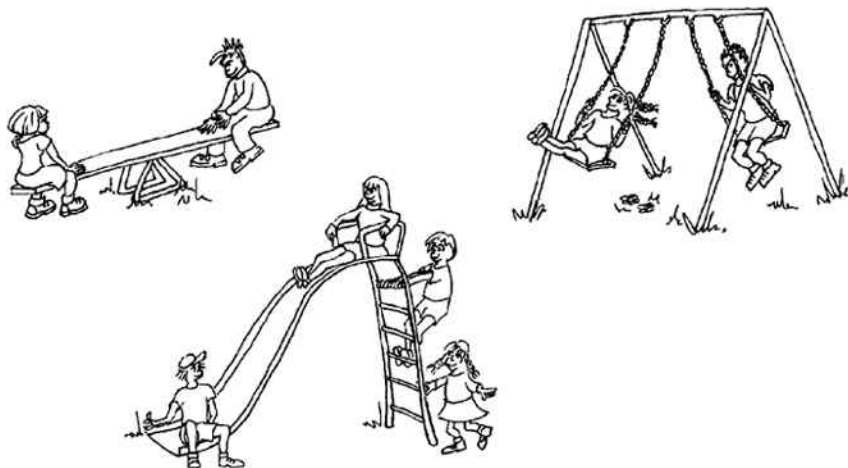
$$\frac{1}{2} \text{ of } \square = 20$$

- 10
- 40
- 80
- 100

30. When you subtract one of these numbers from 900, the answer is greater than 400. Which number is it?

- 712
- 667
- 579
- 459

Use the following information to answer questions 31 to 32.



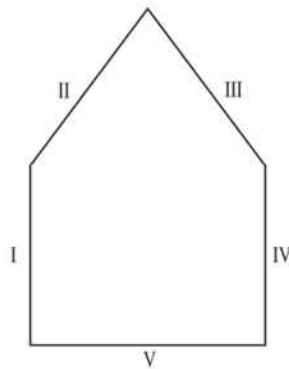
31. What fraction of the children were on the seesaw?

32. Using **one half** and **one quarter**, complete the story problem about these children at the playground.

"_____ of the children were at the slide and _____ of them were on the swings."

End of Section

33. Marta drew the figure shown below.
In Marta's drawing, which two line segments appear to be parallel?



- I and IV
- II and III
- III and V
- IV and V

34. Which number is represented by n ?
 $8 \times n = 128$

- 13
- 14
- 16
- 19

35. Which diagram shows all the possible combinations of one shirt, one pair of shorts, and one kind of shoes?

Shirt	Shorts	Shoes
White	Red	Sneakers
	Blue	Sandals

White — Red — Blue

White — Red — Sneakers
 White — Blue — Sandals

White — Red — Sneakers
 White — Red — Sandals
 White — Blue — Sneakers
 White — Blue — Sandals

White — Red — Sneakers
 White — Red — Sandals

36. Feleti cleans houses and uses the rule below to work out how much to charge.

Cost (\$) = 20 x (number of hours worked) + 10

He spent 3 hours cleaning a house.

How much should he charge?

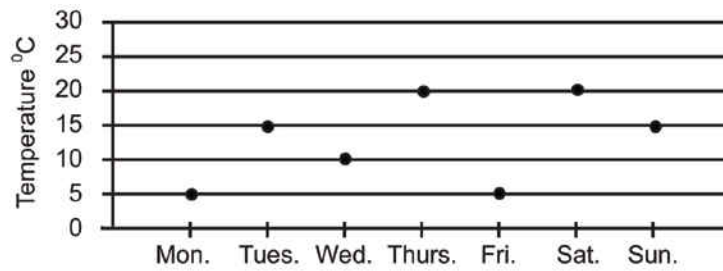
\$70

\$60

\$50

\$30

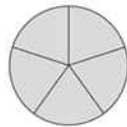
37. The graph below shows a city's 2pm temperature readings for one week. Between which two days was there the largest increase in temperature?



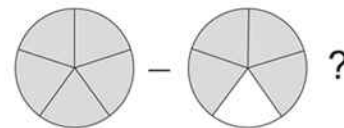
- Wednesday and Thursday
- Thursday and Friday
- Friday and Saturday
- Saturday and Sunday

38.

This is a whole.

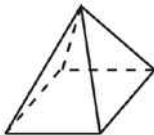
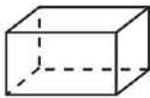
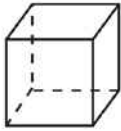
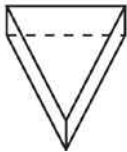


What is



- $\frac{1}{5}$
- $\frac{4}{5}$
- $\frac{5}{4}$
- $\frac{9}{5}$

39. Which of the following figures has the **least** number of edges?



40. The number of points scored by the First XV Rugby Team in 8 games last season was 15, 27, 33, 17, 22, 22, 31 and 25.

Which stem and leaf graph correctly displays this data?



3	1 3
2	2 2 5 7
1	5 7



3	7 5
2	7 5 2 2
1	7 5



3	1 3
2	2 5 7
1	5 7



3	
2	7 2 2 5
1	5 7

41. Consider this figure.

Which of the following is a rotation in the plane of the given figure?



-
-
-
-

42. A bottle of liquid dog vitamins indicates that a dog gets two drops of vitamins each day for every five kilograms of body weight.

How many drops of vitamins should a 20-kilogram dog get each day?

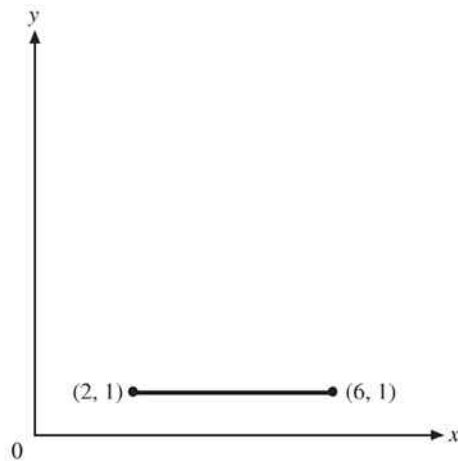
- 2
- 4
- 8
- 22

43. Toupou used matches to make a shape pattern. The first three shapes are shown. How many matches would Toupou use to make the **fifth** shape in the pattern?



- 34
- 30
- 26
- 22

44. Look at the line segment shown below.
What is the length of the line segment?



- 1 unit
- 2 units
- 4 units
- 6 units

45. Marta has a garden. Every week more flowers grow.
One flower grows during week 1. Three flowers grow during week 2. The pattern continues, as shown in the table below.
How many flowers grow during week 9?

WEEK	FLOWERS
1	1
2	3
3	6
4	10
5	15

- 37
- 40
- 45
- 56

46. Which shows a slide of the shape below?



-
-
-
-

47. What is the value of the expression below if $a = 3$?
 $15 - (a + 8)$

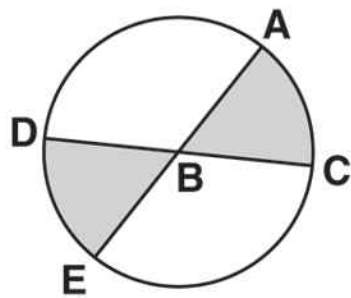
- 4
- 12
- 20
- 26

48. What is the **greatest** number of different outfits that can be made with 2 pairs of pants and 5 shirts?
(Each outfit must have exactly one pair of pants and one shirt.)

- 5
- 7
- 10
- 25

49. Section ABC and section EBD of the flower garden contain roses. \overline{AE} and \overline{CD} are straight line segments.

If $\angle ABC$ measures 38° , what is the measure of $\angle EBD$?



- 38°
- 52°
- 90°
- 142°

50. By looking at the graph what can you conclude about the relationship between blood cholesterol and exercise?

