Week 7/8
Term 3
2023

HAWKER COLLEGE
Engage | Inspire | Achieve

MA2
Revision/Test Week

Goals

Test and Review:
Your exam is on:
Thursday 7th September at 11:15am – 1:15pm in the gym

You need to bring you OWN: calculator, pen or pencil and summary sheet. We will NOT have a calculator or pen for you!

HAVE YOU GOT A CALCULATOR?
(you cannot use your phone)

Theoretical Components

Resources:
https://www.hawkermaths.com/ma2.html

Knowledge Checklist

Week 1
- Types of data
- Displaying categorical data
- Stem-and-leaf plots
- Dot plots
- Frequency histograms and polygons
- Reading and interpreting graphs

Week 2/3
- Describing distributions of numerical data
- Mean
- Median and mode
- Range and IQR
- Standard deviation
- Boxplots

Week 4
- Use of summary statistics
- Describe and compare data
- Parallel boxplots

Week 5/6
- Labelling sides of right-angled triangles
- Sine, cosine and tangent ratio
- Finding sides and angles of triangles
- Angles of elevation and depression
- Bearings
- Angles

Practical Components

Go through your folders and complete any missing tasks and review any questions that are incorrect.

GET YOUR OWN CALCULATOR!!!

Your classwork, investigations and in-class task (weeks 1 – 7) make up 20% of your grade for this semester.

Make sure you have handed in any unsubmitted work before the exam. This will allow your teacher to provide some feedback prior to the exam.

Investigation

Prepare your double-sided A4 page of handwritten summary notes.

The exam will cover all work from weeks 1 – 7. It is worth 30% of your grade for this semester.

QFO

Quiz/Forum/Other

Checklist: Are you up to date with your briefs this semester?

Brief: topic/work covered	**Rules and formulae; worked examples / reminders**
Week 1: Data **Score: /20**	
Week 2/3: Summary statistics **Score: /20**	
Week 4: Data analysis **Score: /20**	
Week 5/6: Trigonometry **Score: /20**	
Week 7: In-class quiz **Score: /20**	
TOTAL **Score: /100**	**%**

REVISION

We can classify data into two groups, each with two subgroups.

Numerical – Data using numbers

Discrete – Data only using whole numbers

Continuous – Data using decimal values

Categorical – Data not using numbers

Ordinal – Data that can be put into an order

Nominal – Data that can not be ordered

Question 1

For each of the following questions, classify what kind of data you would expect the responses to be. (Feel free to also answer the questions)

a) What is your favourite sports team?

b) How high can you jump?

c) How many pets have you had?

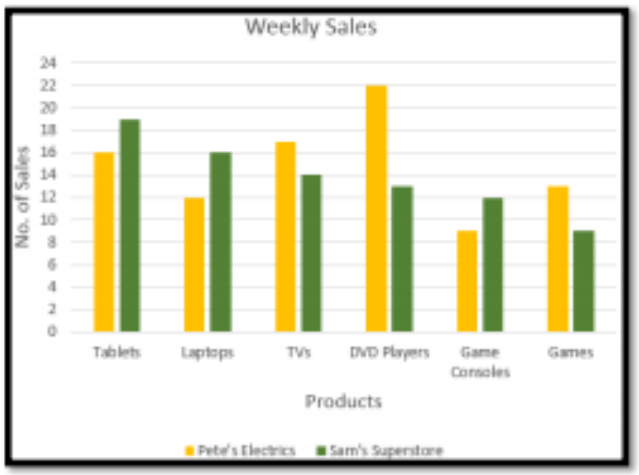
d) Do you agree, disagree or are neutral to the statement 'Pineapple is good on pizza.'

In most circumstances, it is much easier to understand data through graphs than simply by looking at raw data.

Question 2.

Use the data from the double column graph to answer the questions.

The graph shows the sales data from two electronics stores, Pete's Electrics and Sam's Superstore.



1. Which store sold the most game consoles? _____
2. Which store sold the most TVs? _____
3. How many laptops did Sam's Superstore sell? _____
4. How many more games than game consoles did Pete's Electrics sell? _____
5. How many more DVD players did Pete's Electrics sell than Sam's Superstore? _____
6. Which store sold the most products during the week? _____
7. Pete's Electrics make $20 for each tablet they sell. Sam's Superstore makes $15 for each tablet they sell. Which store makes the most money from tablet sales?

8. Why do you think this data would be useful for the owners of both stores?

Source: easyteaching.net

When we have a collection of raw numerical data, it is often useful to create a data summary. Typically, we want to know about:

The measures of central tendency:	**The measure of spread**
Mean	Range
Median	Interquartile Range
Mode	Standard Deviation (Sample)

Question 3.

Compare the two sets of data:

Data set 1: 5, **7, 10, 12, 7, 8, 5, 10, 15, 20, 21, 10, 8, 15, 10, 12, 13, 18, 20**

Data set 2: **6, 10, 15, 10, 12, 10, 6, 10, 22, 15, 10, 21, 10, 12, 13, 12, 10, 10**

a) Which set has the higher mean?

b) Which set has the higher median?

c) Which set has the higher mode?

d) Which set has the higher range?

e) Which set has the higher IQR?

f) Which set has the higher sample standard deviation?

Note: You may use whichever method you prefer to calculate these answers (Including using an online calculator)!

An important point in analysing data is noticing any outliers, clusters, skews, gaps, and other main features.

Question 4.

For the following set of data:

140, 142, 145, 150, 152, 155, 156, 170, 176, 180, 200, 210, 215, 300

a) An ordered stem and leaf plot.

b) A box and whisker plot.

c) Are there any clusters in the data?

d) Are there any gaps in the data?

e) Are there any outliers in the data?

f) How is the data skewed?

With triangles, we have many methods we can use to solve unknown sides and angles depending on what we already know.

We have the SOH CAH TOA rules, which can be rearranged to give us the following set of formulas for right angle triangles:

$$Sin\ \theta = \frac{Opp}{Hyp} \qquad Cos\ \theta = \frac{Adj}{Hyp} \qquad Tan\ \theta = \frac{Opp}{Adj}$$

AND

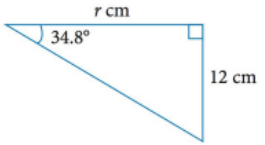
SINE	COSINE	TANGENT
Sinθ = opposite ÷ hypotenuse	Cosθ = adjacent ÷ hypotenuse	Tanθ = opposite ÷ adjacent
Opposite = hypotenuse * Sinθ	Adjacent = hypotenuse * Cosθ	Opposite = adjacent * Tanθ
Hypotenuse = opposite ÷ Sinθ	Hypotenuse = adjacent ÷ Cosθ	Adjacent = opposite ÷ Tanθ

Bearings

Finding unknown sides and angles

Find the value of the pronumeral in each of the following.
Round each answer to 2 decimal places.

Start



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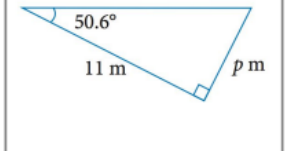

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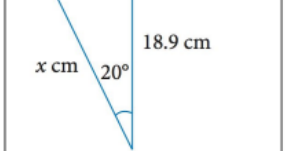

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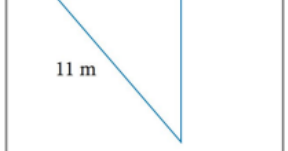


17.27

19.03

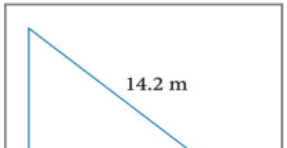
48.01

41.99

20.11

12.30

7.07



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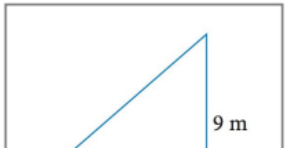

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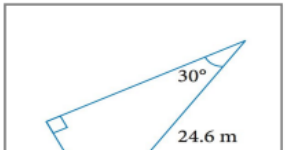

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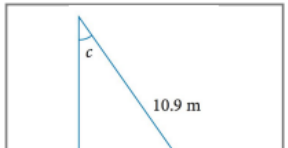


41.10

2.62

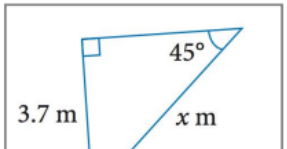
20.71

17.22

34.77

42.98

34.03



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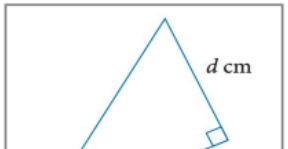

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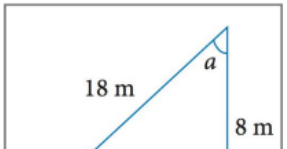

35.87

Finish

Working