Sample exemplars of acceptable candidate responses to Outcome 3 questions

Numeracy 2022 assessment items

Unit Standard 32406A

Use mathematics and statistics to meet the numeracy demands of a range of situations

These sample annotated exemplars are a partial sample of candidate evidence, with a commentary.

AS THIS UNIT STANDARD IS PART OF A PILOT FROM 2021 TO 2023, CARE SHOULD BE TAKEN WHEN USING THESE PARTIAL EXEMPLARS FOR PLANNING AND ASSESSMENT PURPOSES.

Question 1(c)

(c) On average, New Zealanders eat about 250 eggs each per year.
The population of New Zealand is just over 5 million people.

Here is a headline from a newspaper.

IT'S NO YOLK!

New Zealanders eat over 1 billion eggs per year.

Is the headline realistic? Explain your answer using the information provided in part (c).

Spell Check

250 times 5 million = 1.25 billion eggs so there for this is an realistic headline.

The candidate takes a position of accepting the headline and includes a correct calculation from the information in the context.

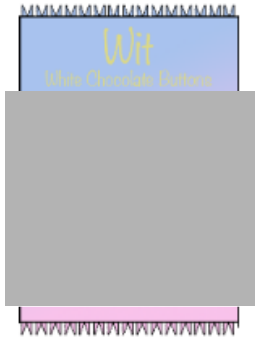
Question 2(b)

(b) At the supermarket, Aloma finds two different brands of white chocolate buttons.

Blanco Buttons

100 grams for $1.40

Wit Buttons



290 grams for $3.60

Which is the best buy for Aloma – Blanco Buttons or Wit Buttons?
Explain your answer using the price information above.

Spell Check

100 grams of Blanco buttons = $1.40
and 100 grams of wit buttons cost around about $1.20
so I would say the wit buttons are the best deal.

It is inferred that the candidate calculates $3.60 ÷ 3 to establish that Wit Buttons cost about $1.20 per 100 grams. They then use this calculation to compare the two types of buttons and give a conclusion that aligns with their calculations.

Images adapted from:

https://www.thecakemixer.co.nz/products/belgian-white-chocolate-buttons-250gm (Image on left)

https://samoa.eatthekiwi.com/products/sv-white-compound-buttons-1kg (image on right)

Question 4(a)

(a) The admission prices at Kaitiakitanga Wildlife Park are as follows:

Adults	$36.00
Children (5-15 Years)	$10.50

In the school holidays the park offers a special deal for a family pass. The advertisment for the deal reads:

$80 Family Pass
Kaitiakitanga Wildlife Park
2 adults and up to 3 children
Save over $20

Is the advertisement true? Will a group that uses the family pass save money?
Explain your answer using the advert and the pricing information.

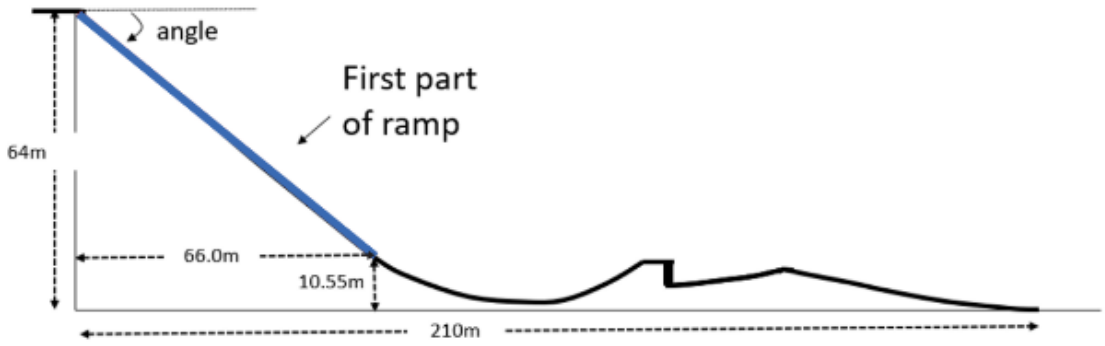
Spell Check

yes you are roughly saving $20 becuase 2 times 36 = $72
and $10.50 times 3 = $31.50
and then $31.50 + 72= $103.5
so yes go for the family pass you will save over 20 dollars.

The candidate correctly calculates the cost of 2 adults and 3 children at normal prices. They compare the family pass ($80.00) with the normal price and correctly conclude that the family saves over $20.00.

Question 5(c)

(c) Below is a side on view of the 'Big Air' ramp. The diagram is **NOT** to scale.



A presenter speaking on TV said that the first part of the ramp drops at an angle of about 40°.
Is 40° a good estimate of the angle?

Explain your answer using information from the diagram.

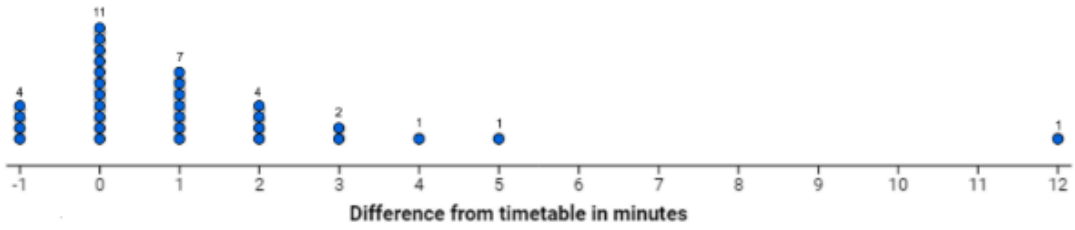
Spell Check

Yes the triangle of the first part of the ramp has a height of 53.45m and a width of 66m. If the length of the height and the width was the same, the angle would have been 45° but since it's not and isn't significantly different, 40° is a good estimate of the angle.

The candidate takes a position that an estimate of 40^0 is reasonable. They justify the position by explaining that a diagonal of a square forms a 45^0 angle. Since the dimensions of the slope are 53.45 m (height) and 66 m (width) the angle should be close to 40^0.

Question 6(c)

(c) Huia likes to arrive at work early and has created a graph to record the arrival times of the 9:03 am bus at her stop.



A difference of –1 means the bus arrives one minute early.

Huia says, "The chance of the bus being on time, or early, is 50%".
Do you agree with Huia? Explain your answer using information from the graph above.

Spell Check

I agree with Huia because the bus is on time or early 15 times and the bus has been late 16 times. That means that the bus has been late once more than early. The chance of the bus being early or on time is around 50%.

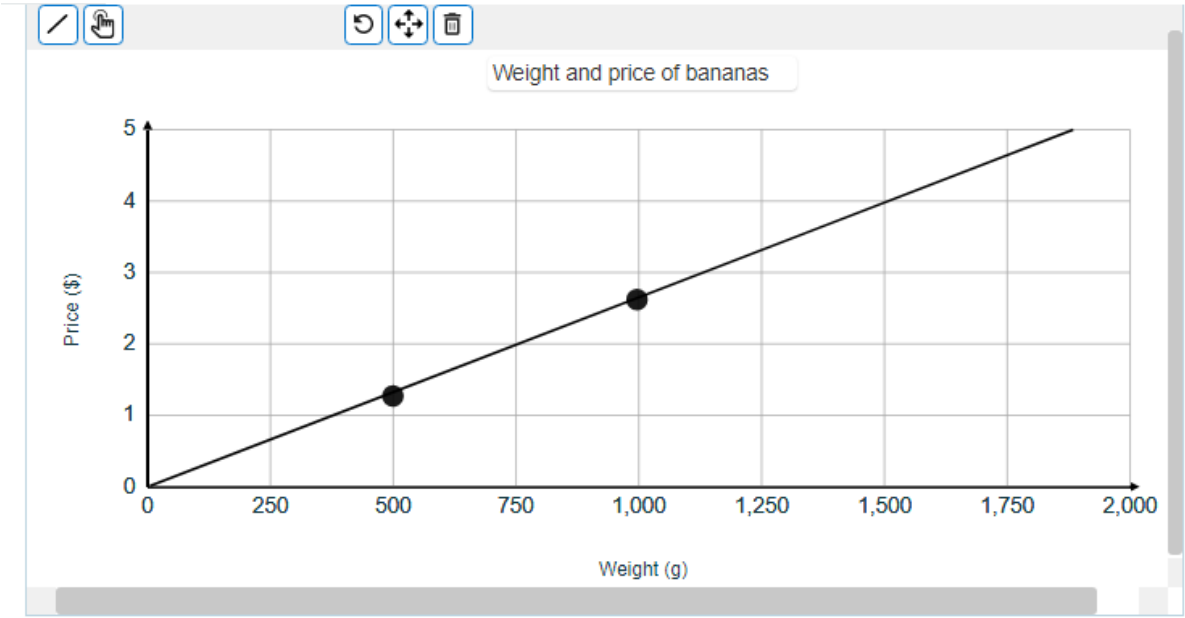
The candidate states their position. They correctly interpret the dot plot of arrival times for the bus. They recognise that the bus is late 16 out of 31 times and correctly state that the proportion is close to 50%.

Question 7(c)

(c) This table shows the weights and prices of two bunches of bananas.

Weight	Price
1 kilogram	$2.70
500 grams	$1.35

Plot the weight and price for the two bunches of bananas on the graph below. Draw a line through the points and continue the line to the edges of the graph in each direction.



Explain how the line could be used to find the price of a bunch of bananas that weighs 1.2 kilograms.

Spell Check

You can look at where 1,200 along the x-axis and go up until you find where the line goes through 1,200, then look across the the y-axis and that will be the cost.

The candidate creates a correct graph of the relationship between weight and price. They explain clearly how to locate the correct price for 1.2 kg (1200g) of bananas using the line.