

Essential Skills Wales

Essential Application of Number Skills (EAoNS)

Level 3 Controlled Task

Assessor Pack

Raising Fitness Levels

Version 2.3

Sample (Set A)

Produced jointly by the four Essential Skills awarding bodies:

Agored Cymru
City & Guilds
Pearson
WJEC



Assessment requirements

The following is a summary of the Essential Skills Wales (ESW) Controlled Task Conditions. These requirements should be read in conjunction with the relevant **Controlled Task Candidate Pack**. General assessment guidelines applicable to all ESW assessments can be found in the **Essential Skills Wales Suite Qualification Handbook**.

Controlled Task Assessment

Controlled tasks are **summative assessments** measuring subject-specific skills. Candidates will need to show they can utilise these skills in a holistic manner, relevant to real-life circumstances. The assessment outcome is **pass/fail**.

Controlled tasks must be:

- internally assessed, by appropriately qualified staff, using the Mark Scheme provided. Please see section 2.2 of the **Qualification Handbook** for details of staff qualification.
- internally quality assured, by appropriately qualified staff
- externally quality assured/moderated by City & Guilds
- compliant with **Controlled Task Conditions**.

Controlled Task Conditions

This controlled task must be completed under the conditions set out below. 'Controlled' relates to all aspects of how the task is administered and assessed.

Candidates should only attempt this controlled task when they have been registered for this qualification and have developed the necessary skills at the required level. Learning development input should be completed before the candidate attempts this controlled task. This controlled task must be successfully completed before the Structured Discussion is attempted.

Working Period

The candidate must complete this controlled task within an 8 week 'working period'. The working period commences on the date the candidate starts working on the task. The working period may be extended only in specific extenuating circumstances or if the academic term does not extend to 8 weeks. Please see section 4.3 of the **Qualification Handbook** for further information.

Working Time

The candidate has up to **8 hours in total** to complete this controlled task. This task 'working time' allowance will formally start at the point when a task is first provided to the candidate. The task working time may be extended only in specific extenuating circumstances. Please see section 4.3 of the **Qualification Handbook** for further information.

Supervised conditions

This controlled task must be completed under the following supervised conditions:

- This task is an 'open book' assessment. Candidates may have access to routine resources that might be available in a 'real life' situation, for example: PCs/laptops, tablets, dictionaries, calculators, reference books, relevant class notes and source material approved by their tutor/assessor so long as they are not designed *specifically* to assist with this assessment and do not compromise independent achievement of the standard. Mobile phones or other transmitting/receiving devices are not permitted. The candidate can access the Internet using supervised facilities.
- The environment within which tasks are completed must be supervised. This supervision must be **continuous** and ensure no interruption and/or undue influence is possible whilst candidates are working on the task. Suitable locations might include a classroom, a library or a workplace as long as an appropriate environment and supervision is maintained. For the avoidance of doubt, this environment does not require formal 'examination' conditions.
- The supervisor must be a reliable, responsible person who is accountable for ensuring adequate supervision and control of the environment is maintained. The supervisor must be present throughout the working time and be able to confirm that each candidate produced all work independently. The supervisor can be the candidate's tutor and/or assessor or another suitable person.
- This controlled task may be completed in one session or split over several sessions, as long as no learning or preparation is provided in between. If not completed in one sitting, the candidate's papers and all materials produced by the candidate must be collected in and stored securely until the next working time session begins. On no account may candidates take any of their work away with them between sessions, for example to work on a task at home.
- The working period and working time taken to complete this controlled task must be monitored and recorded as indicated on the front page of the **Candidate Pack**. The candidate, supervisor, assessor and centre details must be completed and the declarations must be signed and dated before completed tasks are submitted for assessment.

Assistance and Access Arrangements

Assessors may provide candidates with the opportunity to clarify task requirements during the working period however this must not extend to any form of formative feedback. For example, recommending that a candidate should review their calculations would be inappropriate, whereas recommending the candidate re-read a particular section of the task requirements would be acceptable. Please see section 4.6 of the **Qualification Handbook** for further information on access arrangements.

Second and Subsequent Attempts

A specific controlled task can be attempted only once. However, a candidate may undertake a different controlled task, (either another title from the City & Guilds pre-approved bank or a centre devised assessment that has been approved by City & Guilds) at another time if they do not pass. Wherever the candidate is unsuccessful, they **must** undergo further development in the relevant skill(s) before re-attempting at a later date.

Collaboration

This controlled task requires the candidate to work individually.

Mark scheme

Essential Application of Number Skills at Level 3

Task title: Raising Fitness Levels

Part 1 (maximum 3 marks)	At least 1 mark for row A required to pass	
The candidate has shown evidence of:	Mark scheme	Row
<p>planning how to tackle a problem by breaking it down into a series of tasks (N3.1.1b)</p>	<p>2 marks: candidate produces a complete plan</p> <p>The plan must include: the information to be used from the source materials AND the calculations to be done AND how results for Part 2 and Part 3 will be presented</p> <p>The structure must be in the form of: e.g. a list, table or flow chart e.g. a spider diagram with arrows or numbers to show a logical sequence Accept a narrative plan with a clear structure to show a logical sequence.</p> <p>OR</p> <p>1 mark: candidate shows clear evidence of planning but with up to two errors or omissions e.g. a flow chart with one or two action points missing e.g. a complete spider diagram with no indication of the order in which action points are to be carried out e.g. a list of action points in order, with no indication of a specific method of presentation for one or both parts of the task Accept a complete narrative plan with limited structure or a well-structured plan with up to two errors or omissions.</p> <p>See an example of a suitable plan at the end of the mark scheme.</p> <p>Award 0 marks for a plan that is substantially copied from the Candidate Pack.</p>	<p>A</p>

<p>justifying why methods are appropriate for a task (N3.1.1h)</p>	<p>2 marks: candidate chooses suitable methods and justifies choice of at least two of their methods e.g. To calculate the average BMI for 18 to 39-year-olds in the North region, I will highlight all the rows where North is the region and the age between 18 and 39 years. This means I can check I have selected all the relevant rows and not missed any, so my calculation uses the correct values. e.g. I will use a spreadsheet formula to find the percentage change from the starting heart rate to the heart rates after exercise. I will copy the formula for each type of exercise. This is quicker than repeating the calculation on a calculator.</p> <p>OR</p> <p>1 mark: candidate chooses suitable methods and justifies choice of one of their methods</p> <p>May be seen anywhere in the task.</p>	<p>B</p>
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Part 2 (maximum of 9 marks)		
The candidate has shown evidence of:	Mark scheme	Row
<p>using at least one large data set of a size appropriate to a planned activity and to meet the purpose of the activity (N3.1.2e)</p>	<p>1 mark: candidate shows evidence of effectively using the table in Source 1 in a way that suits their purpose e.g. candidate correctly identifies all the people in their chosen region</p>	<p>C</p>
<p>grouping data into classes of width appropriate to the data (N3.1.2e)</p>	<p>2 marks: candidate groups all relevant data into appropriate classes e.g. numbers of hours of exercise per week and BMI values grouped correctly by the age of each individual</p> <p>OR</p> <p>1 mark: candidate groups relevant data into appropriate classes with no more than two errors or omissions</p> <p>See the table of correct answers at the end of the mark scheme.</p>	<p>D</p>

<p>comparing distributions using measures of average and interquartile range and estimating mean, median and range of grouped data (N3.2n)</p>	<p>1 mark: candidate shows a complete correct process to find an average e.g. $[2 + 1.5 + 7.25 + 6 + 5 + 2 + 1 + 3 + 4 + 2.75] \div 10$ (= 3.45 hrs mean weekly exercise of 18 to 39-year-olds in the West region e.g. 1, 1.5, 2, 2, 2.75, 3, 4, 5, 6, 7.25 and $[2.75+3] \div 2$ (= 2.875 hrs median weekly exercise of 18 to 39-year-olds in the West region)</p> <p>1 mark: correct answers for average weekly exercise AND BMI for both age groups in the chosen region e.g. means for the West region</p> <table border="1"> <tr> <td>Age (yrs)</td> <td>18-39</td> <td>40+</td> </tr> <tr> <td>Weekly exercise (hrs)</td> <td>3.45</td> <td>1.55</td> </tr> <tr> <td>BMI</td> <td>24.88</td> <td>25.68</td> </tr> </table> <p>e.g. medians for the West region</p> <table border="1"> <tr> <td>Age (yrs)</td> <td>18-39</td> <td>40+</td> </tr> <tr> <td>Weekly exercise (hrs)</td> <td>2.875</td> <td>1.5</td> </tr> <tr> <td>BMI</td> <td>24.95</td> <td>25.65</td> </tr> </table> <p>Accept correct rounding to 1 decimal place or more.</p> <p>See the correct answers for all regions at the end of the mark scheme.</p>	Age (yrs)	18-39	40+	Weekly exercise (hrs)	3.45	1.55	BMI	24.88	25.68	Age (yrs)	18-39	40+	Weekly exercise (hrs)	2.875	1.5	BMI	24.95	25.65	E
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<p>selecting and using appropriate methods to effectively present and illustrate findings, showing trends and making comparisons, including numerical, graphical and written formats (N3.3.1a)</p> <p>constructing complex tables, charts, graphs and diagrams and labelling with titles, scales, axes and keys appropriate to purpose and audience (N3.3.1c)</p>	<p>1 mark: candidate uses an appropriate method of presentation for their results for Part 2 e.g. complex table, comparative/component bar chart, line graph or complex diagram.</p> <p>1 mark: candidate uses suitable title AND labels with units AND key</p> <p>1 mark: candidate populates table/chart/graph or diagram with correct data (± 2 mm tolerance for plots on a hand drawn chart, graph or diagram)</p>	F																		

drawing appropriate conclusions based on findings, making comparisons and giving valid explanations (N3.3.2c)	<p>1 mark: candidate chooses a group to take part in the exercise classes and gives a valid reason for their choice e.g. I chose the people aged 40 years or more for the exercise classes, as they do on average just over 1½ hours of exercise per week, which is almost 2 hours less than the mean for 18 to 39-year-olds. The mean BMI of the people aged 40 years or more is 25.68, which is greater than the mean BMI of the 18 to 39-year-olds and the ideal adult BMI. This means that the older group would gain more benefit from the exercise classes than the 18-to-39-year-olds.</p>	G
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Part 3 (maximum 9 marks)		
reading, understanding and interpreting information from tables, charts, graphs and diagrams (N3.1.2b)	<p>1 mark: candidate shows evidence of correctly obtaining, relevant information from the table in Source 2 e.g. correct heart rates for all three identified exercises</p>	H
rearranging and using formulae, equations and expressions (N3.2o)	<p>1 mark: candidate shows a correct process to find a target heart rate e.g. $(h =) E[220 - a] \div 100$ e.g. $50 \times [220 - 40] \div 100$ (= 90 bpm for a 40-year-old at 50% intensity)</p> <p>1 mark: at least one correct answer for 50% intensity AND at least one correct answer for 70% intensity e.g. 90 (bpm for a 40 year old at 50% intensity) AND 126 (bpm for a 40 year old at 70% intensity)</p> <p>Accept correct rounding to the nearest whole number where relevant.</p>	J
<p>selecting and using appropriate methods to effectively present and illustrate findings, showing trends and making comparisons, including numerical, graphical and written formats (N3.3.1a)</p> <p>constructing complex tables, charts, graphs and diagrams and labelling with titles, scales, axes and keys appropriate to purpose and audience (N3.3.1c)</p>	<p>1 mark: candidate uses an appropriate method of presentation for their results for Part 3, using a different method to the one used in Part 2 e.g. complex table, comparative/component bar chart, line graph or complex diagram.</p> <p>1 mark: candidate uses suitable title AND labels and units AND key</p> <p>1 mark: candidate populates table/chart/graph or diagram with correct data (± 2 mm tolerance for plots on a hand drawn chart, graph or diagram)</p>	K

<p>carrying out multi-stage calculations efficiently with numbers of any size (N3.2b)</p>	<p>1 mark: candidate shows a correct process to calculate the percentage change in heart rate $((\text{heart rate after exercise} - \text{starting heart rate}) \times 100 \div \text{starting heart rate})$ e.g. Pilates: $[89-60] \times 100 \div 60 (= 48.333\%)$</p> <p>1 mark: correct answer for percentage change in heart rate for all three chosen exercises e.g. 48.3% (for Pilates) AND 55% (for yoga) AND 83.3% (for aerobics) Accept correct rounding 1 d.p. or to the nearest whole percentage.</p> <p>See the correct answers for all exercises at the end of the mark scheme.</p>	L
<p>drawing appropriate conclusions based on findings, making comparisons and giving valid explanations (N3.3.2c)</p>	<p>1 mark: candidate selects one exercise for the exercise classes, consistent with their results, and gives a valid reason for their choice e.g. I have selected aerobics as the exercise activity for the group of people aged 40 years or more. This group has a target heart rate of between 82 beats per minute and 126 bpm, and the typical heart rate after aerobics is 110 bpm, which is just less than the maximum of the target range. This would improve fitness particularly for people who do not usually do much exercise.</p>	M

Part 4 (maximum 11 marks)		
<p>reading, understanding and interpreting information from tables, charts, graphs and diagrams (N3.1.2b)</p>	<p>1 mark: candidate correctly obtains relevant information from one of the diagrams in Source 4 e.g. all dimensions correct for the room in their chosen region</p> <p>Accept correct dimensions from the candidate's printed version.</p> <p>See the correct dimensions at the end of the mark scheme.</p>	N

<p>working out actual dimensions from scale drawings and scaling quantities up and down (N3.2i)</p>	<p>1 mark: candidate shows a correct process to scale up at least one dimension e.g. northern location, actual length of longer side: $15 \times 150 (= 2250 \text{ cm})$</p> <p>1 mark: correct answer for at least three dimensions e.g. northern location: ($15 \times 150 =$) 2250 (cm) ($4.3 \times 150 =$) 645 (cm) ($3.5 \times 150 =$) 525 (cm)</p> <p>See the correct scaled dimensions at the end of the mark scheme.</p> <p>Accept correct use of their answers from row N.</p>	<p>P</p>
<p>calculating within and between systems and making accurate comparisons (N3.2j)</p>	<p>1 mark: candidate correctly converts relevant dimensions for the room in their chosen location e.g. northern location: (2250 cm =) 22.5 (m) (645 cm =) 6.45 (m) (225 cm =) 2.25 (m) (525 cm =) 5.25 (m) (900 cm =) 9 (m)</p> <p>Accept correct use of their answers from row P.</p>	<p>Q</p>
<p>solving problems involving irregular 2D shapes (N3.2k)</p>	<p>1 mark: candidate shows a correct process to find the area of the room in their chosen location e.g. $22.5 \times 6.45 + 2.25 \times (9 + 5.25) \div 2 (= 161.15625 \text{ m}^2$ for the room in the northern location)</p> <p>1 mark: correct area for the room in their chosen location e.g. 161.15625 (m^2 for the room in the northern location) e.g. $(40 \times 12.5 - 2 \times 0.5 \times 3 \times 3 =)$ 443.75 m^2 (eastern location) e.g. $(12 \times 12 + 3.2 \times [12 + 5.8] \div 2 =)$ 172.48 m^2 (southern location) e.g. $(21.5 \times 15 + 2.5 \times [10 + 14] \div 2 =)$ 352.5 m^2 (western location)</p> <p>Accept correct use of their answers from row Q.</p>	<p>R</p>

<p>using compound measures (N3.2d)</p>	<p>1 mark: candidate shows a correct process to find the number of people that will fit in the room in their chosen location e.g. $161.15625 \div 15$ (= 10.74375 people, northern location)</p> <p>1 mark: correct answer e.g. 10 (people, northern location) e.g. 29 (people, eastern location) e.g. 11 (people, southern location) e.g. 23 (people, western location)</p> <p>Whole number required. Must be rounded down.</p> <p>Accept correct use of their answers from row R.</p>	<p>S</p>
<p>justifying choices of methods of presentation (N3.3.1d)</p>	<p>1 mark: candidate justifies their choice for at least one method of presentation e.g. I presented the target heart rate for people as a line graph with two lines as this clearly shows the range of values between 50% and 70% intensity, for any person aged 40 years or over. A bar chart would show the heart rates for the ages plotted, but would not be clear for an age between the plots.</p>	<p>T</p>
<p>justifying methods used, highlighting main points of findings and explaining how far results meet purpose (N3.3.2b)</p> <p>describing how possible sources of error might have affected results (N3.3.2d)</p>	<p>1 mark: candidate makes a valid comment on the effectiveness of their results in meeting the purpose of the task e.g. I used the mean weekly exercise and BMI for the 2 age groups to choose a suitable group for the exercise classes, which was the first aim of the task. I calculated the target heart rates at 50% and 70% intensity, which I used to make a graph that can be used by anyone in the group. I also found the percentage change in heart rate and used the results to select an activity. This met the second aim of the task. I calculated the area of the room and the maximum number of people that would fit in it, which was the third aim. These results fully meet the purpose of the task.</p> <p>1 mark: candidate makes an appropriate comment explaining how possible sources of error might have affected results e.g. Dimensions taken from a diagram may not reflect the actual size of the room, and scaling up will magnify any measurement errors, which might affect the calculation of the number of people who could use the space.</p>	<p>U</p>

Example of a plan for rows A and B

Raising Fitness Levels Task Plan

Part 2

Step	Action
1.	Select all rows of data for one area (Source 1).
2.	List weekly exercise and BMI for 18-39s in the area and weekly exercise and BMI for 40s and over in the area (Source 1).
3.	Calculate mean for weekly exercise and BMI for both groups. For each age group, I will highlight all the rows where the person is in that age group in the region I chose. This means I can check I have selected all the relevant rows and not missed any, so my calculation uses the correct values.
4.	Present results in a dual bar chart.
5.	Compare results, choose which group should have exercise classes and say why.

Part 3

Step	Action
1.	Rearrange formula (Source 2) to calculate target heart rate for exercise, at 50% and 70% intensity.
2.	Present results in a dual line graph.
3.	Choose three suitable exercises from Source 3.
4.	Calculate percentage increase in heart rate for the three exercises. I will use a spreadsheet formula to do this calculation. I will copy the formula for each type of exercise. This is quicker than repeating the calculation on a calculator.
5.	Choose the best exercise for the group and say why.

Part 4

Step	Action
1.	Measure dimensions of the room in my area (Source 4).
2.	Scale up the measurements and convert to metres.
3.	Calculate the area of the room.
4.	Divide the room area by the area needed for each person and round down to next whole number.
5.	Justify methods of presentation.
6.	Explain how results meet the purpose.
7.	Explain how errors could have affected results.

Correct answers for row G (page 1 of 2)

Initials	Region	Age (years)	Weekly exercise (hours)	BMI
DA	east	21	6	25.4
DL	east	22	4.75	26.2
DB	east	24	5	26.5
EA	east	25	4.75	26.9
DC	east	27	6.5	27.0
EB	east	29	2	27.1
EC	east	31	2	27.3
DD	east	32	5.75	26.3
DE	east	34	4.75	26.6
ED	east	38	2	28.4

Initials	Region	Age (years)	Weekly exercise (hours)	BMI
AL	north	22	3.5	24.0
AA	north	23	9.75	23.6
AB	north	25	7.5	24.1
AC	north	26	3.5	26.9
AM	north	26	5	23.6
AN	north	27	4.5	23.7
BA	north	32	0	24.2
AD	north	34	2	27.1
BB	north	36	2	25.0
BC	north	37	2	25.2

DF	east	40	4.5	26.1
EE	east	41	2	24.1
DG	east	43	4	26.2
EF	east	44	1.5	24.3
EG	east	46	1.5	24.5
DH	east	46	3.75	27.3
EH	east	50	1.5	25.1
EJ	east	51	0	26.2
DJ	east	53	4.5	26.2
DK	east	55	4.5	24.8

AE	north	40	0	27.2
AF	north	42	2.25	25.9
BD	north	43	3.75	26.3
BE	north	44	3.75	27.0
AG	north	45	2	26.5
BF	north	47	3.5	26.8
AH	north	48	1.75	27.0
AJ	north	51	1.5	28.5
AK	north	52	0	27.2
BG	north	53	3.25	26.5

Correct answers for row G (page 2 of 2)

Initials	Region	Age (years)	Weekly exercise (hours)	BMI
BH	south	20	4	25.4
BJ	south	23	3	24.8
CE	south	23	4.75	26.9
CF	south	26	0	26.9
CG	south	27	2	26.2
CH	south	30	2	26.3
CJ	south	32	3.5	26.5
BL	south	35	4.25	24.3
BK	south	36	3	25.0
CK	south	37	3	26.8

BL	south	40	3	26.1
BM	south	42	2	27.8
CL	south	43	3.5	27.0
CA	south	45	0	28.2
CB	south	47	0	27.9
CM	south	49	4	27.2
CN	south	51	4	26.8
CC	south	51	1	27.6
CP	south	52	3	26.9
CD	south	53	1	27.8

Initials	Region	Age (years)	Weekly exercise (hours)	BMI
EK	west	20	7.25	25.0
FD	west	22	6	24.9
EL	west	24	5	25.1
FE	west	26	4	25.2
FF	west	28	2	25.6
EG	west	29	3	24.3
EH	west	31	2.75	24.3
FG	west	33	1	24.8
EJ	west	36	2	25.2
FH	west	37	1.5	24.4

EK	west	42	1.5	25.5
FJ	west	44	1.5	24.5
EL	west	44	1.5	25.2
FK	west	46	2.5	26.5
FL	west	49	2.5	24.8
FA	west	49	0	26.9
FB	west	52	0	25.8
FM	west	52	3	25.8
FN	west	54	2.5	25.4
FC	west	54	0.5	26.4

Correct answers for row H

East

	mean		median	
	18-39 years	40 years and over	18-39 years	40 years and over
Weekly exercise (hours)	4.35	2.775	4.75	2.875
BMI	26.77	25.48	26.75	25.6

North

	mean		median	
	18-39 years	40 years and over	18-39 years	40 years and over
Weekly exercise (hours)	3.975	2.175	3.5	2.125
BMI	24.74	26.89	24.15	26.9

South

	mean		median	
	18-39 years	40 years and over	18-39 years	40 years and over
Weekly exercise (hours)	2.95	2.15	3	2.5
BMI	25.91	27.33	26.25	27.4

West

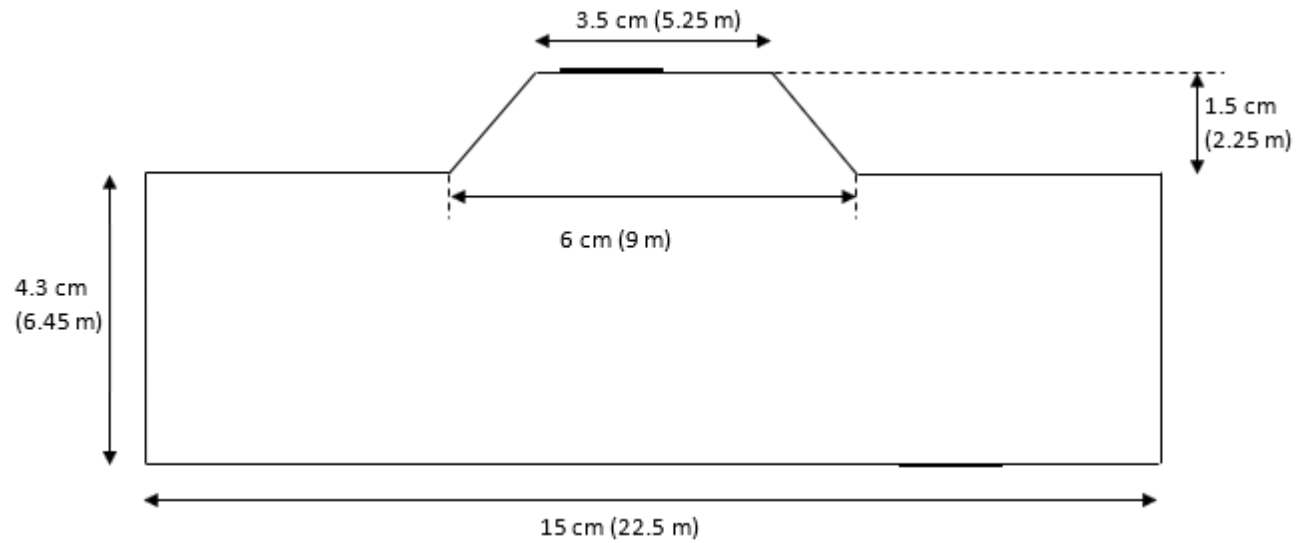
	mean		median	
	18-39 years	40 years and over	18-39 years	40 years and over
Weekly exercise (hours)	3.45	1.55	2.875	1.5
BMI	24.88	25.68	24.95	25.65

Correct answers for row P

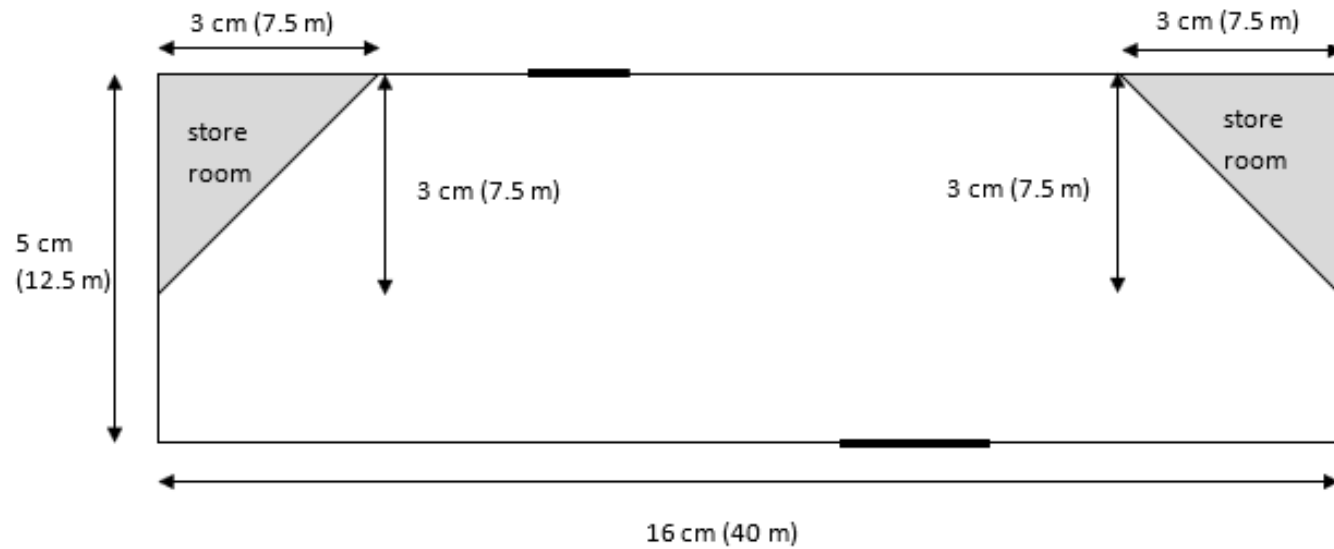
Exercise	Typical heart rate after exercise (beats per minute)*	Percentage change in heart rate
Pilates	89	48.3%
Yoga	93	55%
Aerobics	110	83.3%
Step	125	108.3%
Bodypump	135	125%
Boxercise	144	140%
Bootcamp	152	153.3%
Kettles	155	158.3%

Correct dimensions (rows R, S and T, scaled dimensions in brackets)

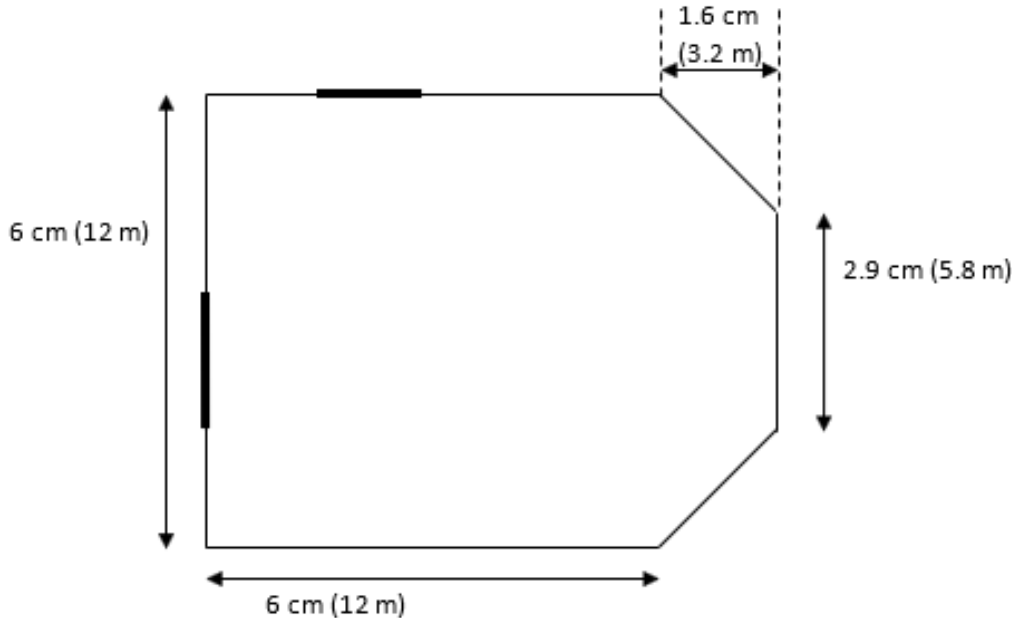
Northern Location



Eastern Location



Southern Location



Western Location

