2D & 3D Shapes KS2 SATS Standard Worksheet Answers

1. Award **TWO** marks for table completed correctly as shown: up to 2

	number of **flat** surfaces	number of **curved** surfaces
sphere	0	1
cone	**1**	**1**
cuboid	**6**	**0**
cylinder	**2**	**1**

If the answer is incorrect, award **ONE** mark for two out of three rows completed correctly.

Accept a blank box for '0'.

[2]

2.

✘	✓
✓	✓
✓	✘
✘	✓

*Accept alternative unambiguous indications such as **Y** and **N**.*

(a) First column of table completed correctly. 1

(b) Second column of table completed correctly. 1

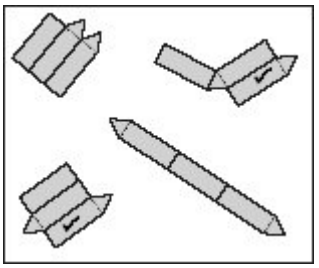
[2]

3. Table completed as shown: 1

	number of faces	number of edges
 cuboid	6	12
 square-based pyramid	5	**8**

[1]

4. Two nets ticked as shown: 1



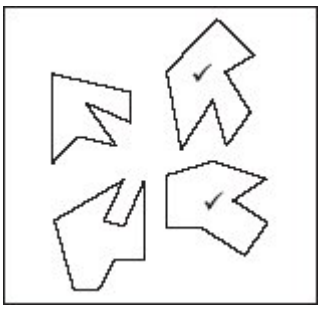
***Both** nets must be ticked for the award of the mark.*

Accept any other clear way of indicating the two correct nets,

such as circling.

[1]

5. Two shapes ticked as shown: 1

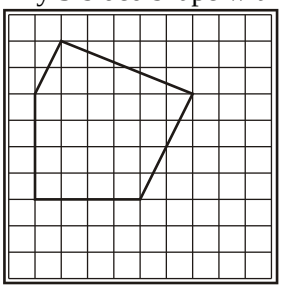


***Both** shapes must be correct for the award of the mark.*

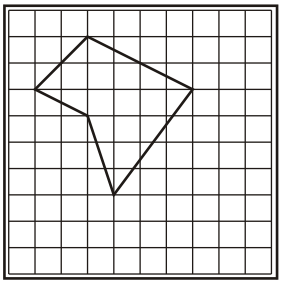
Accept any other clear way of indicating the correct two shapes, such as crosses or circling.

[1]

6. Any 5-sided shape with straight sides using the two given sides, eg 1



OR



Accept slight inaccuracies in drawing, provided the intention is clear.

Accept shapes with or without shading.

***Do not** accept any extension of the given lines.*

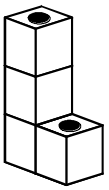
[1]

7. A **AND** F 1 m

Answers may be given in either order.

Accept alternative indications, eg shapes ticked or circled, provided the intention is clear.

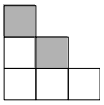
8. Both circles drawn on faces as shown: 1m



The size and accuracy of the circles is unimportant, provided the correct faces are indicated.

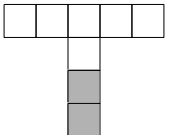
[1]

9. (a) Equivalent of 2 squares shaded, eg 1m



Accept part squares shaded as long as the intention is clear.

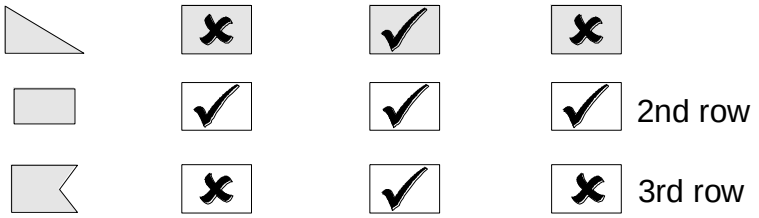
(b) Equivalent of 2 squares shaded, eg 1m



Accept part squares shaded as long as the intention is clear.
Accept inaccuracies in shading providing the intention is clear.

[2]

10. (a) & (b)



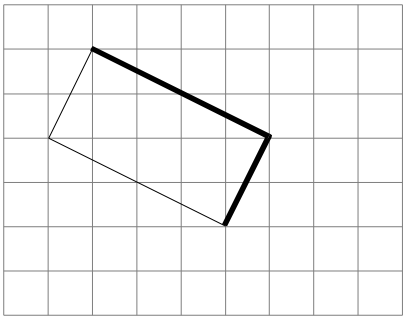
2

For each row, all three boxes must be correct.
***Do not** accept blank boxes.*
Accept other unambiguous indications, eg:

- ***Y (for tick) N (for cross).***

[1]

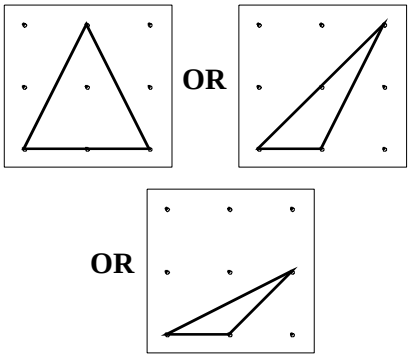
11. Completion of rectangle as shown: 1m



Accept slight inaccuracies in drawing provided the intention is clear.

1]

12. Triangles without a right angle drawn in any orientation on the grid, eg 1m

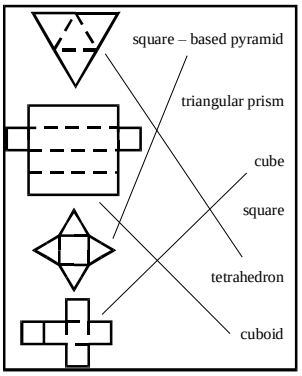


***Do not** penalise lines drawn without a ruler, provided the intention is clear.*

Accept only triangles which have vertices at dots.

[1]

13. 1 mark for drawing all arrows as shown.



Do not award the mark if the child draws additional lines unless he or she clearly indicates which three are correct.

[1]

14. Letters written in order as shown: 1

fewest right angles			most right angles
C	A	B	D

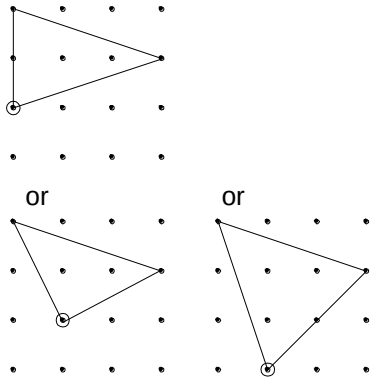
Letters must be in the correct order.

Accept the correct number of right angles written instead of letters, eg

fewest right angles			most right angles
C	2	3	4

[1]

15. Any isosceles triangle made by drawing two more lines, eg: 1



Vertices need not be exactly on the dots provided intention is clear.

There is no requirement to use the dots.

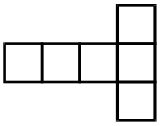
Lines may go outside grid.

*Any triangle that **uses the given line** and has at least **two sides equal to within 2mm** is acceptable.*

Accept equilateral triangles.

[1]

16.



All 5 fold lines correctly drawn for 1 mark.

Allow plus or minus 2 millimetres.

[1]

17. Award **TWO** marks for table completed as shown. up to 2

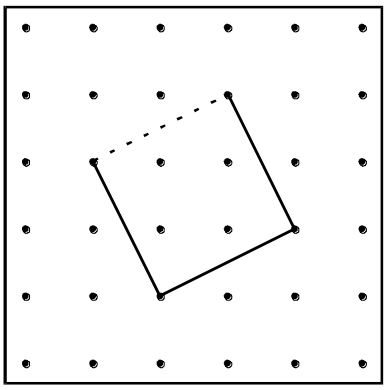
B	A	
		C

If table is incorrectly completed, award **ONE** mark for:

- only one letter correctly placed with no additions to the table; **OR**
- Both letters correctly placed and no more than one addition to the table.

[2]

18. Completion of the diagram as shown. 1



Lines must be drawn to within 2mm of the correct dots.

Three lines must be drawn for the award of the mark.

***Do not** penalise drawings done without a ruler, provided the intention is clear.*

***No** mark is awarded for a square which goes outside the given grid.*

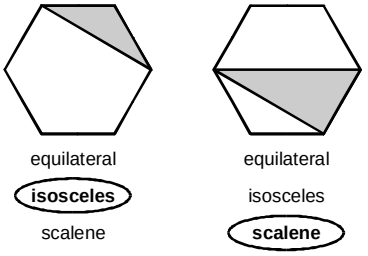
[1]

19. pyramid

Accept square pyramid.
Accept misspellings.

[1]

20. Correct names indicated as shown: 1m



Accept alternative, unambiguous indications such as underlining the correct name.

***Both** must be correct for the award of the mark.*

[1]

21. (a)(b) Award **ONE** mark for each appropriate mathematical characteristic to a maximum of **TWO** marks, eg. up to 2

- "They all have a right angle."
- "Each has straight edges (or sides)."
- "They are all irregular."
- "They are all polygons."
- "They all have corners."
- "They all have 4 or more sides."

*If **2** correct reasons are given as one statement, marks for both (a) and (b) should be awarded, eg.*

- *They all have at least 4 sides and a right angle.*

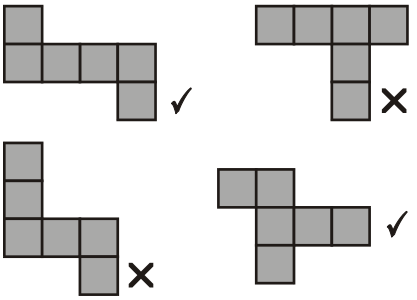
[2]

22. (a) 100cm *Accept 1m.* 1

(b) 6 **OR** six ***Do not*** *accept drawing only, even if only six squares are shown.* 1

[2]

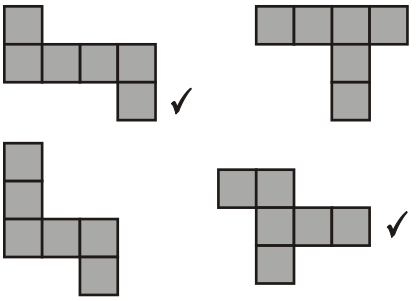
23. Award **TWO** marks for diagrams ticked or crossed as shown: up to 2



If the answer is incorrect, award **ONE** mark for three diagrams ticked or crossed correctly.

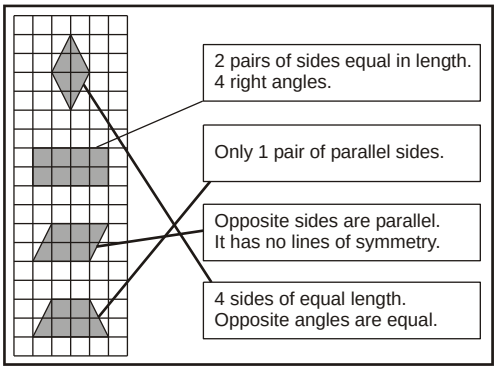
*Accept alternative unambiguous indications such as **Y** or **N**.*

*For **TWO** marks accept:*



[2]

24. **Three** lines drawn as shown: 1

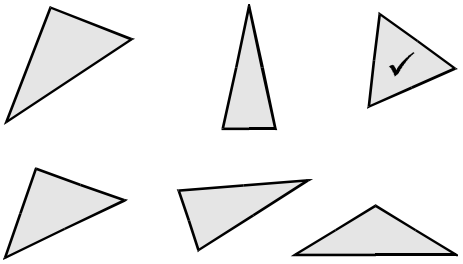


All three *lines must be drawn correctly for the award of the mark.*

Lines do not have to touch the boxes or shapes exactly, provided the intention is clear.

[1]

25. (a) Triangle marked as shown. 1



Accept other unambiguous indications

(b) A mathematical property, such as 1

- all angles equal;
- all sides equal;
- all angles 60°;
- 3 lines of symmetry;
- all the angles/sides are the same size;
- rotational symmetry of order 3.

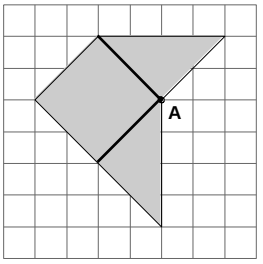
***Do not** accept vague descriptions, eg*

- *'They are equal';*
- *'They're symmetrical';*
- *'Equal points'.*

Award the mark for a correct statement, even if the wrong shape is ticked.

[2]

26. Diagram completed correctly as shown: 1m U1



Accept slight inaccuracies in drawing provided the intention is clear.

[1]

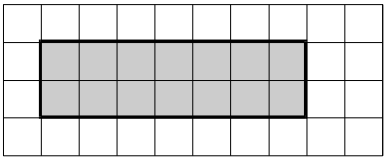
27. B **AND** D 1m

Accept letters in either order.

Accept unambiguous indications on the diagram.

[1]

28. Any rectangle with an area of 14 squares, eg 1



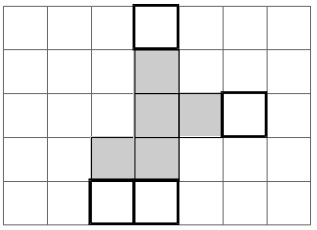
Rectangle need not be shaded or coincident with the grid lines.

Accept extensions to the grid to allow, for example, a 14 × 1 rectangle.

Accept slight inaccuracies in drawing provided the intention is clear.

[1]

29. Diagram completed with **ONE** of the four extra squares shown. 1m



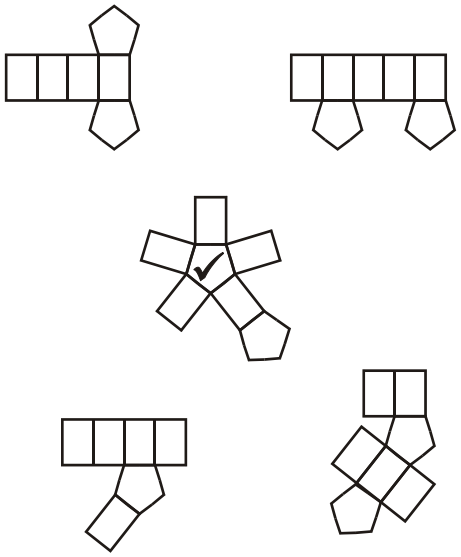
Accept slight inaccuracies in drawing provided the intention is clear.

Accept alternative indications, eg squares ticked or circled.

Accept more than one square drawn if **all** are correct.

[1]

30. One net ticked as shown:



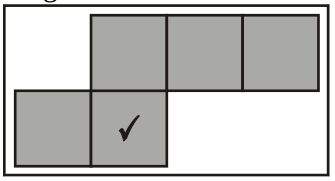
1 m

Accept alternative unambiguous indications of the correct shape, provided the intention is clear,

eg net circled

[1]

31. Diagram marked as shown: 1



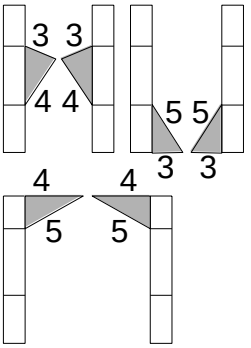
U1

Accept alternative, unambiguous indications, such as a cross in the square shown above.

[1]

32. (a) Award **ONE** mark for correct position of triangle as shown in one of the diagrams below. 1

(b) Award **ONE** mark for accurate drawing of one triangle with right angle (90° ± 2.5°) **AND** length of lines as indicated ± 2mm. 1



***No marks** awarded for triangles **not** attached to main stem.*

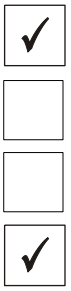
[2]

33. Award **TWO** marks for boxes ticked and crossed as shown: up to 2

If the answer is incorrect, award **ONE** mark for any three boxes correctly completed.

*Accept alternative unambiguous indications such as **Y** or **N**.*

*For **TWO** marks, accept:*



[2]

34. 54 1

Accept figures written on the diagram, provided a total is given.

[1]

35. (a) x = **55°** 1m

(b) y = **145°** 1m

*If the answers for (a) and (b) are transposed, but otherwise correct, award **ONE** mark only, in the (b) box.*

[2]

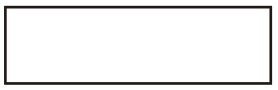
36. Award **TWO** marks for the correct answer of 18° Up to 2m

Calculation need not be performed for the award of the mark.

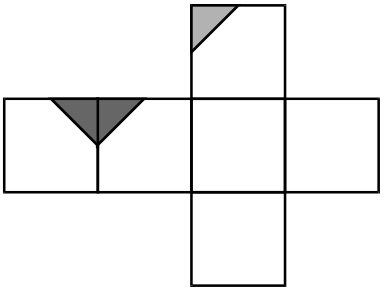
If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg 90 – 60 – 12

[2]

37.



38. Diagram marked as shown: 1m



Both triangles must be correctly marked.

Accept slight inaccuracies in drawing, provided the intention is clear.

Triangles need not be shaded.

[2]

39. Award **TWO** marks for two different answers as shown: Up to 2m

5 and **2** **or** **2** and **5**

AND

3.5 and **3.5**

If the answer is incorrect, award **ONE** mark for any one of the above answers.

The two answers may be given in either order.

***Do not** accept '5 and 2' **AND** '2 and 5' for two marks.*

[2]

40. Award **TWO** marks for the correct answer of 4cm. Up to 2m

*Calculation must be performed for the award of **ONE** mark.*

If the answer is incorrect award **ONE** mark for evidence of appropriate working, eg

1 + 2 + 2 = 5

20 ÷ 5 = wrong answer

[2]