



Y5-6 Maths Homework

16 / 5 / 2022

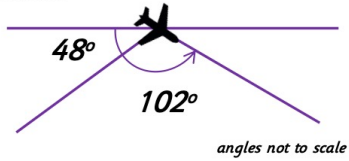


Y5

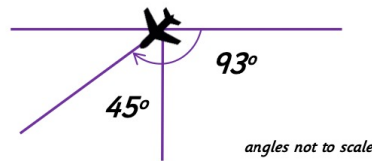
Reasoning and Problem Solving – Properties of Shape – Year 5

You are half way through a directed turn and your line to air traffic control goes down. You know the destination and have made a partial turn.

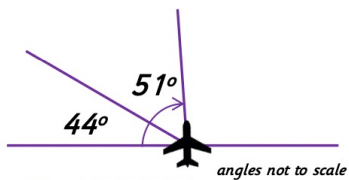
6. Without your protractor calculate the angle which is missing in the three scenarios below...



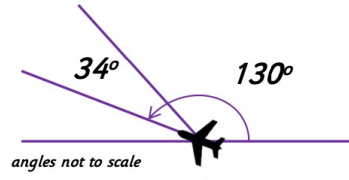
A



B



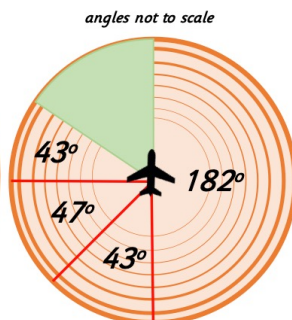
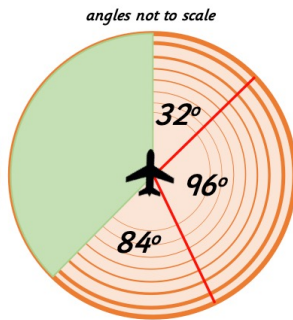
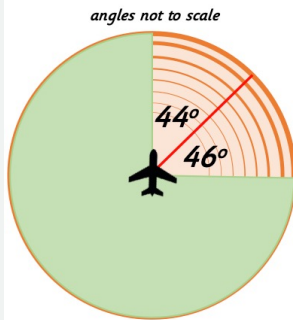
C



D

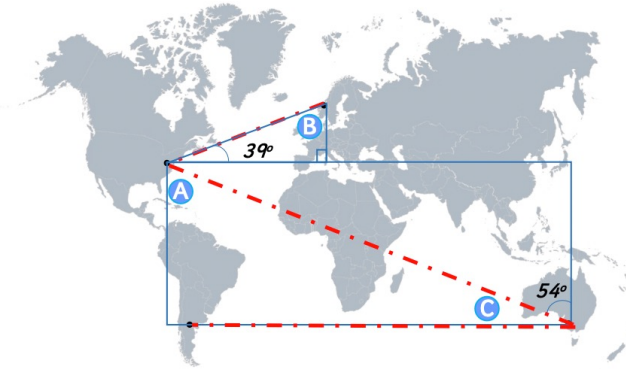
Radar is essential for avoiding obstacles in flight. There has been a malfunction and your radar is partially obscured due to a fault in the internal systems.

7. Use the data below to calculate what angle of your radar is obscured.



Reasoning and Problem Solving – Properties of Shape – Year 5

Your flight path is represented in the dotted line on the map.



A

B

C

8. Use the overlaid shapes and your knowledge of angles to calculate the angles. Explain your answers.

Compare the two four flight routes around Australia.



9. Measure the internal angles and lengths of each flight path. Discuss your findings.

Reasoning and Problem Solving – Properties of Shape – Year 5

The final skill we will test is your ability to visualize space and shape. Although not directly linked to your pilot job, the tasks are key to discovering your underlying ability. Apply yourself to this final task to take off in style.



10. Identify the shape from the descriptions, is there more than one possible answer?

A I have 6 identical faces.

B I have two faces which angles have a sum of 180° . My other 3 faces are quadrilaterals.

C My faces all have 4 angles of 90° .

D My base may change, my other faces have 3 internal angles.



E 2 of my faces are identical, my other 4 have internal angles with a sum of 360° .

F I have no corners, no edges and one surface.

G 2 of my faces are identical, I have 2 curved edges.

H I have one curved surface.

Thank you for taking part in our recruitment drive. We hope to welcome you aboard our company so you can fly the Clear Skies way!

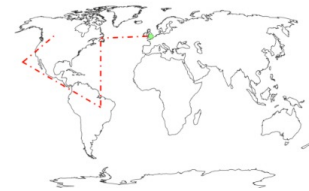


Mark your work

1. Mark last week and this weeks homework
2. Write down your mark
3. Explain: where did you go wrong?

Reasoning and Problem Solving – Properties of Shape – Year 5

1. *Children's answers may vary they should address both errors of angle and direction. She is incorrect as a 180° turn would be to turn around to travel in the direction it came from. The plane has made a 90° turn anticlockwise from a NW to SW course. Clockwise would be NW to NE.*
2. *Estimates will vary A around 45°, B above 90° less than 120°, C less than 30° around 20°*
3. *A = 41° B = 102° C = 18°*
4. *A: The pilot is incorrect he has not put the corner of the angle in the centre of the angle.
B: The pilot is incorrect he has read from the inner scale when he should have used the outer scale.
C: The pilot is incorrect he has not begun his reading at 0.
D: The pilot has lined the edge of the protractor to the corner rather than the centre of the protractor.*
5. *Answer not to scale. America is the destination.*



6. *A = 30° B = 42° C = 85° D = 16°*
7. *270°, 148°, 45°*
8. *A = 54° B = 51° C = 36°
Angle A is complementary to the angle marked 54° so it is a congruent angle and so equal. Angle B is the third angle of a triangle in which the other angles are given so $180° - 39° - 90° = 51°$. Angle C is the diagonal of a rectangle so the angle it dissects is 90° it can be calculated $90° - 54° = 36°$.*
9. *Children's explanations will vary should include discussion of regular and irregular polygons and how their angles and sides relate.*
10. *A cube B triangular prism
C cuboid or cube D pyramid
E any cuboid F sphere
G cylinder H sphere or cone or cylinder*



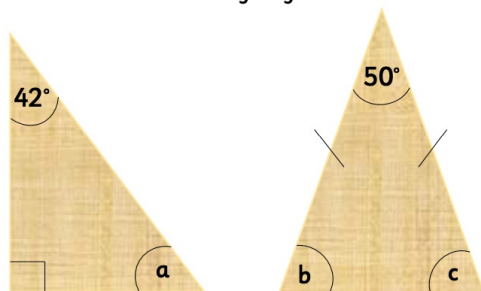
Y6

Reasoning and Problem Solving – Properties of Shape – Year 6

5a. Steve has asked the children to calculate the angles in this sail. No angles have been marked on this sail, is it possible to calculate the missing angles? Explain your answer.



5b. What are the missing angles in these sails?

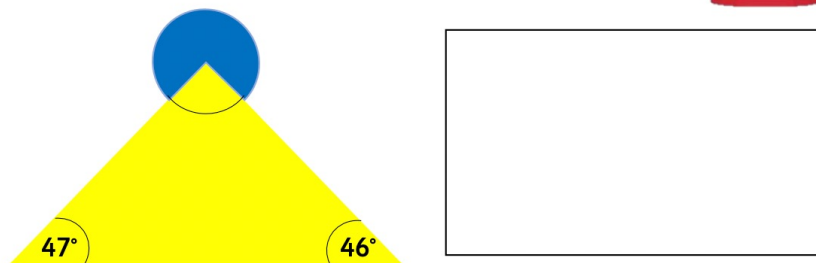


Angle a	
Angle b	
Angle c	

Ali is telling the children all about lighthouses and what they are used for. A lighthouse emits light which enables boats to stay clear of dangerous cliffs/rocks when entering a harbour.



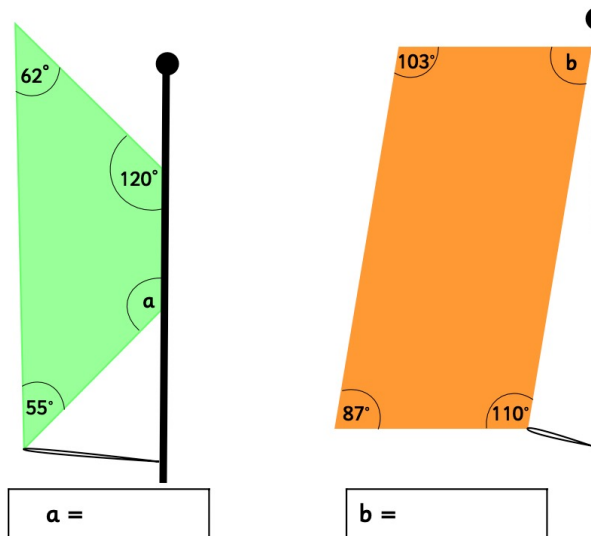
5c. This is a birds eye view showing where the light from the lighthouse is currently shining. What is the size of the angle that is not covered by the lighthouse?



Reasoning and Problem Solving – Properties of Shape – Year 6

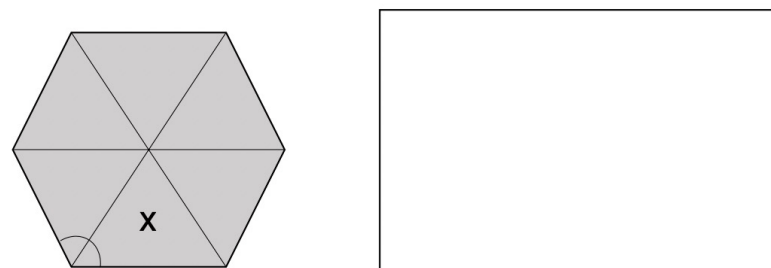
During the summer months, the sailing club also offers the opportunity to do windsurfing. Windsurfing is a surface water sport that combines surfing and sailing using a surf board and a sail. The shape of the sail differs but can sometimes be a quadrilateral. Here are two examples of wind surfing sails:

6. Work out the missing angle in each sail.



6 equilateral triangular sails have been placed down on the floor with the point of the sails connected at the top. They have made a hexagonal shape.

7. Using the angles of sail X, calculate the total of all the internal angles.

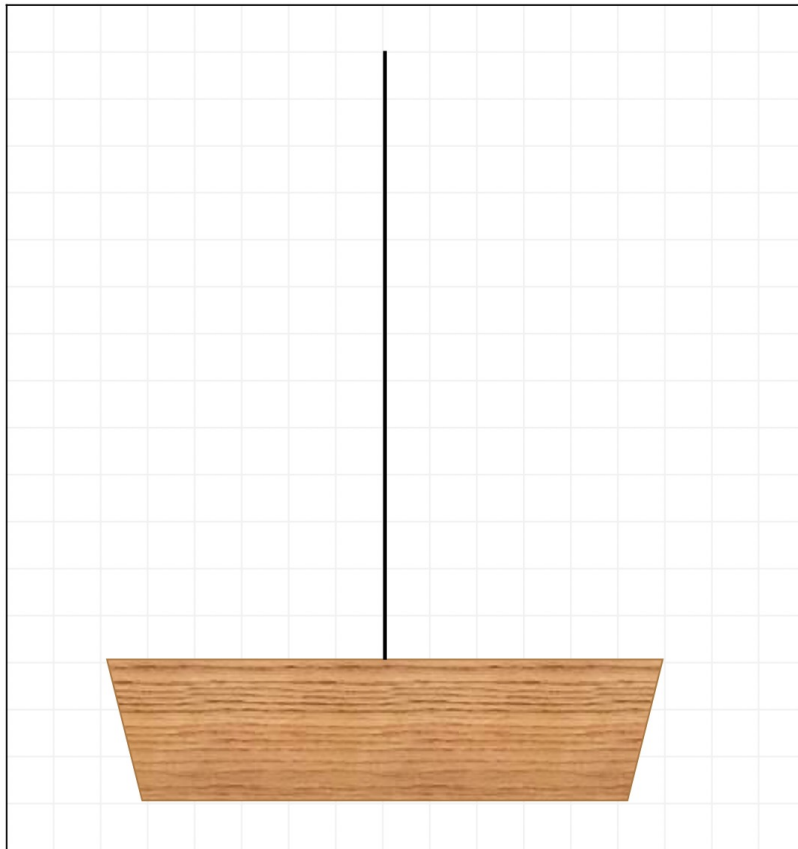


Reasoning and Problem Solving – Properties of Shape – Year 6

8a. Ali has set the children a task. Draw a sail for a boat following the instructions.
The sail has 3 sides.
The horizontal side is 6cm
Angle 1 is a right angle
Angle 2 is 50°

8b. What is the length of the vertical side?

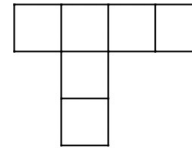
8c. What is angle 3?



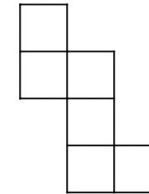
Reasoning and Problem Solving – Properties of Shape – Year 6

Steve is explaining all about safety whilst onboard a sailing boat. A first aid kit is an essential piece of equipment that every sail boat must have. Usually, only a few necessities are required as there is not much room on a sailing boat, so packing light is essential.

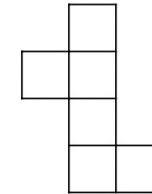
9. Steve thinks that all of these nets will fold up to make a cube, is he correct? Explain why.



A



B



C

The children have had a great visit to the sailing club and can't wait to get back to school to tell the rest of the children all about it.



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1. Mark last week and this weeks homework
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3. Explain: where did you go wrong?

1. 90° and 225°

2a. 90° anti-clockwise or 270° clockwise

2b. An angle which represent 45° for example north to north east or north east to east.

3a. 45°

3b. 315°

3c. 4 – clockwise or 6 – anti-clockwise

4. Angle $a = 47^\circ$ so angle c will also be 47° as opposite angles are equal. Angles d and b together equals $360^\circ - 47^\circ - 47^\circ = 266^\circ$. $266^\circ \div 2 = 133^\circ$.

5a. It is an equilateral triangle therefore all the angles are equal. $180^\circ \div 3 = 60^\circ$.

5b. $a = 48^\circ$ ($180 - 42 - 90 = 48$) $b = 65^\circ$ $c = 65^\circ$ ($180 - 50 = 130 \div 2 = 65$)

5c. 273° ($180 - 47 - 46 = 87$; $360 - 87 = 273$)

6. $a = 123^\circ$ $b = 60^\circ$

7. $180^\circ \times 6 = 1,080^\circ$

8a. An accurate drawing of a triangle. Ensuring that the horizontal line is 6cm and the angles are 90° and 50° . Allow for slight discrepancies.

8b. 7cm

8c. 40°

9. B and C will make a cube.