

Reasoning and Problem Solving

Step 1: Identify Angles

National Curriculum Objectives:

Mathematics Year 4: (4G4) [Identify acute and obtuse angles and compare and order angles up to two right angles by size](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Combine angles to find which remain acute. Two digit values with 5 or 0 in the units, angles combine 1:1.

Expected Combine angles to find which remain acute. Any two digit values addition crossing tens, some combine 2:1 and some have no match.

Greater Depth Using a given angle, calculate which angle they can add to create the largest acute angle and smallest obtuse angle.

Questions 2, 5 and 8 (Reasoning)

Developing Spotting the odd one out, obvious differences all angles presented on a horizontal plane and facing one direction. Angle tester used as pictorial support.

Expected Spotting the odd one out, subtle differences, all angles presented on a horizontal plane, facing any direction with one confusing factor. Angle tester used as pictorial support for some questions.

Greater Depth Spotting the odd one out, very subtle differences, angles presented on a variety of planes and facing any direction. with a number of confusing factors.

Questions 3, 6 and 9 (Problem Solving)

Developing Using 4 digit cards, create either obtuse or acute angles.

Expected Using 4 digit cards, decide whether can make more acute or obtuse angles.

Greater Depth Using 4 digit cards, decide whether can make more acute or obtuse angles, some double digits.

More [Year 4 Properties of Shape](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Identify Angles

1a. Match the angles which will still be acute when they are combined.

60°

40°

30°

25°

75°

10°



PS

Identify Angles

1b. Match the angles which will still be acute when they are combined.

20°

65°

40°

15°

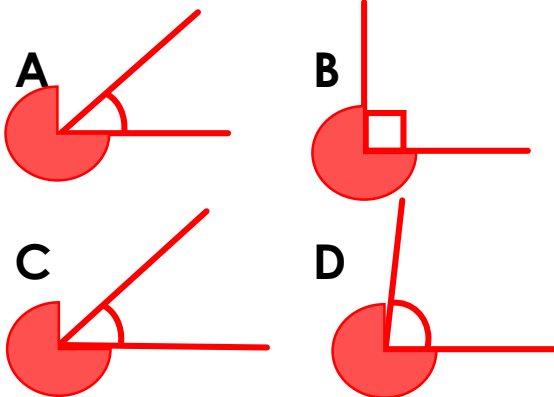
50°

40°



PS

2a. Which angle is the odd one out?

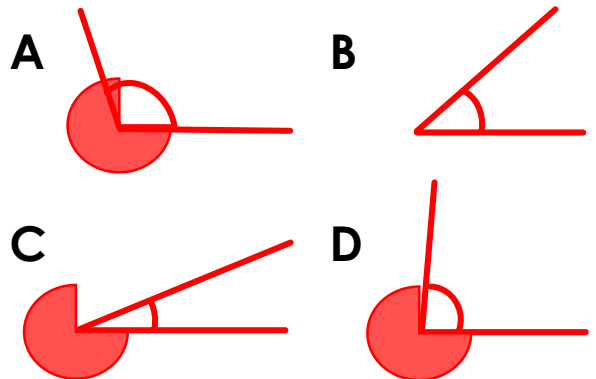


Explain your answer.



R

2b. Which angle is the odd one out?



Explain your answer.



R

3a. Using the digits below how many acute angles can you create?

9

2

5

1



PS

3b. Using the digits below how many obtuse angles can you create?

8

7

1

6



PS

Identify Angles

4a. Match the angles which will still be acute when they are combined.

67°

56°

23°

19°

75°

14°



PS

Identify Angles

4b. Match the angles which will still be acute when they are combined.

33°

56°

14°

66°

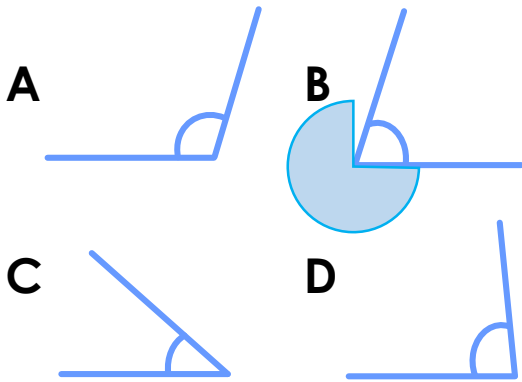
5°

79°



PS

5a. Which angle is the odd one out?

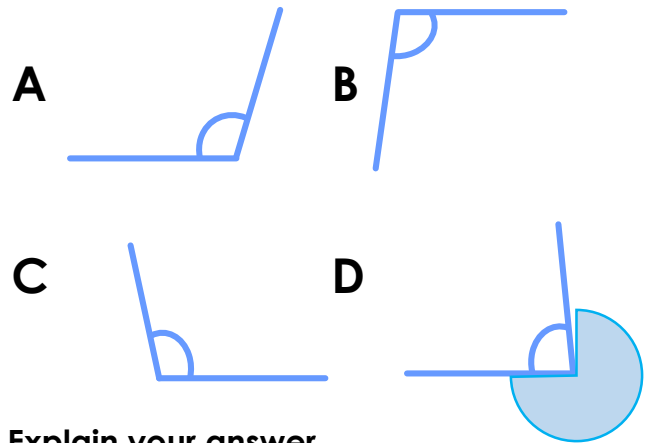


Explain your answer.



R

5b. Which angle is the odd one out?



Explain your answer.



R

6a. Using the digits below can you create more obtuse or acute angles?

3

7

5

4



PS

6b. Using the digits below can you create more obtuse or acute angles?

8

1

9

6



PS

Identify Angles

7a. What is the largest angle you can add to create an acute angle?

67°

+

_____°

23°

+

_____°

85°

+

_____°



PS

Identify Angles

7b. What is the smallest angle you can add to create an obtuse angle?

33°

+

_____°

14°

+

_____°

5°

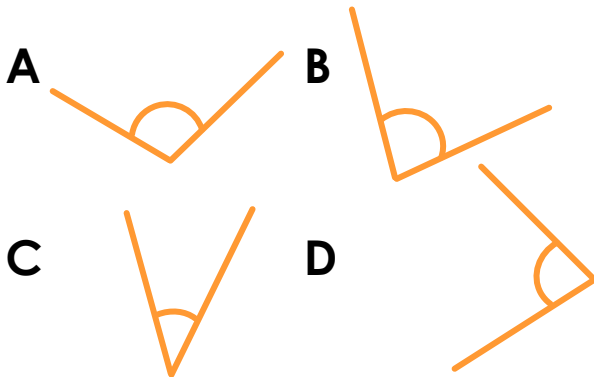
+

_____°



PS

8a. Which angle is the odd one out?

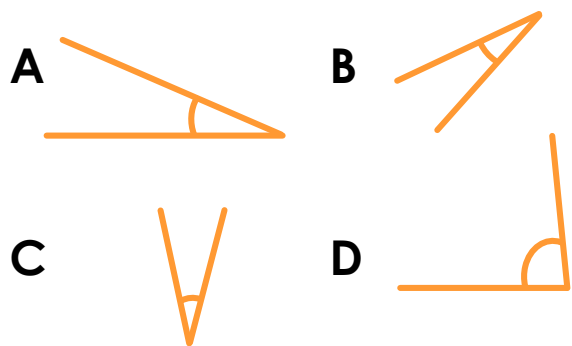


Explain your answer.



R

8b. Which angle is the odd one out?



Explain your answer.



R

9a. Using the digits below can you create more obtuse or acute angles?

1

9

2

9

2

4

8

1



PS



PS

Reasoning and Problem Solving Identify Angles

Developing

- 1a. $60^\circ - 25^\circ$; $30^\circ - 40^\circ$; $75^\circ - 10^\circ$.
2a. B is the odd one out as it is a right angle and the other angles are all acute.
3a. I can make 9 acute angles; 29° , 25° , 21° , 59° , 52° , 51° , 19° , 12° and 15° .

Expected

- 4a. $67^\circ - 19^\circ$; $23^\circ - 79^\circ$; $75^\circ - 14^\circ$.
5a. A is the odd one out as it is an obtuse angle and the others are all acute angles.
6a. I can only create acute angles; 37° , 35° , 34° , 73° , 75° , 74° , 53° , 57° , 54° , 43° , 47° , 45° .

Greater Depth

- 7a. $67^\circ + 22^\circ$, $23^\circ + 66^\circ$, $85^\circ + 4^\circ$
8a. A is the odd one out as it is an obtuse and the others are all acute.
9a. I can create the same amount for each; acute = 19° , 12° , 21° , 29°
obtuse = 91° , 92° , 99° , 129° .

Reasoning and Problem Solving Identify Angles

Developing

- 1b. $20^\circ - 65^\circ$; $40^\circ - 40^\circ$; $50^\circ - 15^\circ$.
2b. A is the odd one out as it is an obtuse angle and all the other angles are acute.
3b. I can make 4 obtuse angles; 178° , 176° , 167° , and 168° .

Expected

- 4b. $33^\circ - 56^\circ$; $14^\circ - 66^\circ$; $5^\circ - 79^\circ$.
5b. D is the odd one out as it is an acute angle and the others are all obtuse.
6b. I can create more acute angles; acute = 81° , 89° , 86° , 18° , 19° , 16° , 68° , 61° , 69° ;
obtuse = 91° , 96° , 98° , 168° , 169° .

Greater Depth

- 7b. $33^\circ + 58^\circ$, $14^\circ + 77^\circ$, $5^\circ + 86^\circ$
8b. D is the odd one out as it is more than 45° . The other angles are all less than 45° .
9b. I can create more angles that are acute; acute = 24° , 28° , 21° , 42° , 48° , 41° , 82° , 84° , 81° , 12° , 14° , 18°
obtuse = 124° , 128° , 142° , 148°