

11+ Maths Practice Paper

Year 6 · Advanced

Lesson 7.1: Angle properties

Read this with your child:

1. This paper has **27 questions** in two parts. Work through them in order. The questions get harder as you go.
2. **Part 1** is multiple choice. Choose **one** answer, A, B, C, D or E, and mark it on the separate answer sheet by drawing a firm line through the box next to its letter. If you change your mind, rub the line out completely and mark your new answer.
3. **Part 2** asks you to write your answer. Write it in the boxes on the answer sheet, **one digit in each box**, starting from the left.
4. If a question is hard, leave it and come back to it at the end.
5. You may use rough paper for working out. You may **not** use a calculator.
6. Suggested time: **35 minutes**.

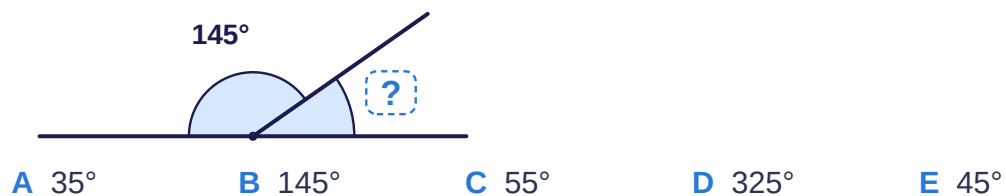
The answer sheet is after the questions. The answers, with a short explanation of each, are at the back for a parent to mark with.

These are original practice questions written by Elite Learners in the style of 11+ entrance tests. They are not produced by, or connected with, GL Assessment or Cambridge University Press & Assessment (CEM).

Example

The two angles are on a straight line.

Find the missing angle.



Answer: A Angles on a straight line add up to 180°: $180 - 145 = 35^\circ$.

The answer, A, has already been marked on your answer sheet.

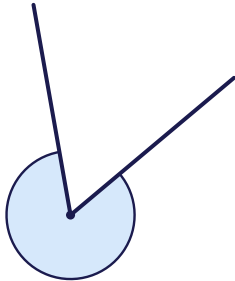
Now turn over and start Part 1.

Part 1: Multiple choice

1

Look at the curve carefully.

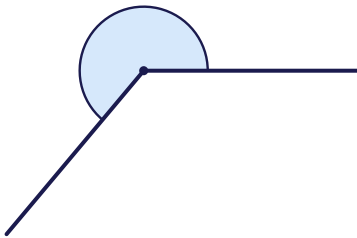
What kind of angle is this?



- A reflex angle
- B acute angle
- C obtuse angle
- D right angle
- E straight angle

2

What is the best estimate for the size of the marked angle?

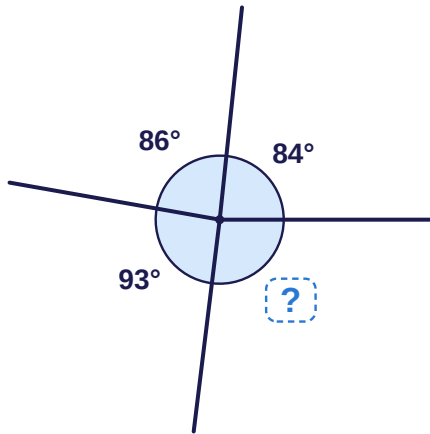


- A about 130°
- B about 50°
- C about 300°
- D about 180°
- E about 230°

3

Four angles meet at a point.

Find the missing angle.



A 83°

B 107°

C 263°

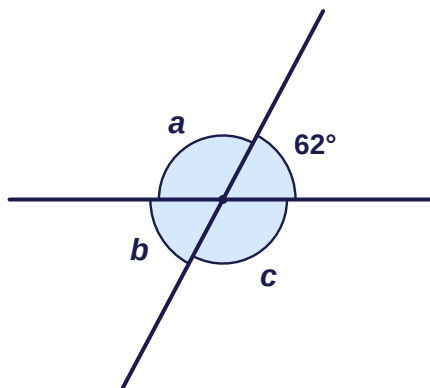
D 97°

E 87°

4

Two straight lines cross.

What is the size of angle b?



A 118°

B 28°

C 298°

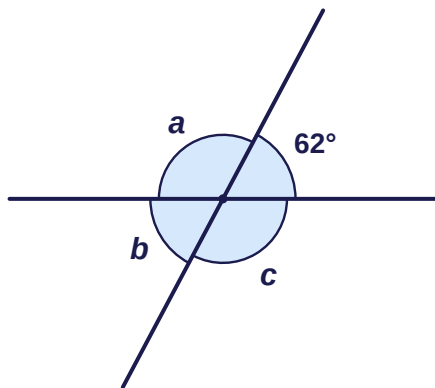
D 62°

E 72°

5

Here is the diagram from question 4 again.

What is $a + b$?



A 124°

B 236°

C 180°

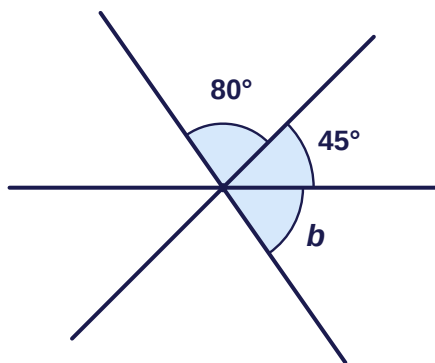
D 360°

E 90°

6

Three straight lines cross at one point.

What is the size of angle b ?



A 125°

B 55°

C 45°

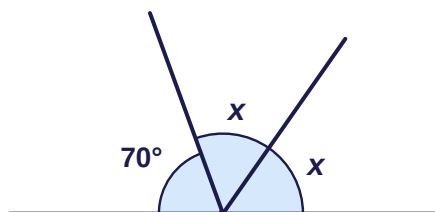
D 80°

E 35°

7

The angles marked x are equal. All three angles are on a straight line.

What is x ?



A 110°

B 70°

C 45°

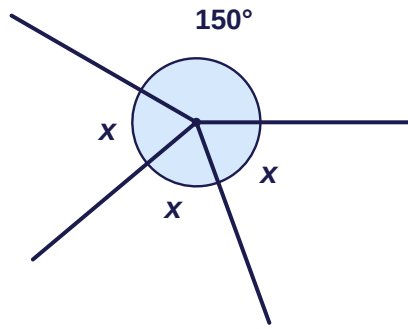
D 35°

E 55°

8

The angles marked x are equal. Four angles meet at a point.

What is x ?



A 210°

B 70°

C 50°

D 105°

E 80°

9

What is the smaller angle between the hands of a clock at 5 o'clock?



A 5°

B 120°

C 180°

D 150°

E 210°

10

What is the smaller angle between the hands of a clock at 8 o'clock?



A 240°

B 80°

C 120°

D 160°

E 90°

11

How many degrees is two thirds of a full turn?

A 120°

B 270°

C 180°

D 230°

E 240°

12

Two angles are on a straight line. One of them is four times as big as the other.

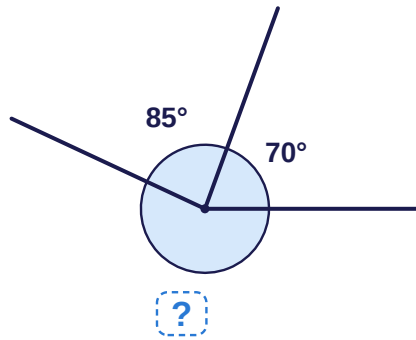
What is the smaller angle?

- A** 45° **B** 144° **C** 20° **D** 36° **E** 30°
-

13

Three angles meet at a point.

How big is the missing reflex angle?



- A** 205° **B** 155° **C** 25° **D** 195° **E** 215°
-

14

A robot is facing forwards. It turns 90° clockwise, then another 180° clockwise.

How many more degrees must it turn clockwise to face forwards again?

- A** 270° **B** 180° **C** 360° **D** 0° **E** 90°
-

15

Two angles are on a straight line. One is 40° bigger than the other.

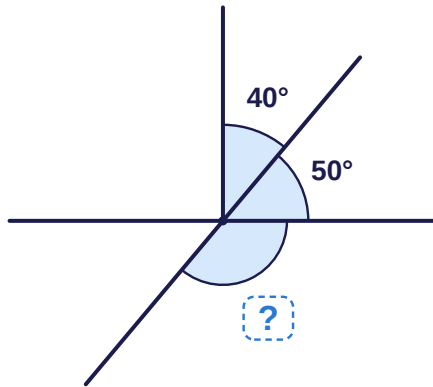
What is the larger angle?

- A** 70° **B** 110° **C** 140° **D** 100° **E** 220°
-

16

Two straight lines cross, and another line comes out from the same point.

Find the missing angle.

A 90° B 130° C 140° D 50° E 40°

17

A full turn is split into 8 equal angles. How big is each angle?

A 40° B 22° C 45° D 90° E 80°

18

Angles a , b and c are on a straight line. Angle b is twice angle a , and angle c is three times angle a .

What is angle c ?

A 90° B 30° C 60° D 120° E 36°

19

What is the reflex angle between the hands of a clock at 4 o'clock?

A 120° B 200° C 240° D 320° E 260°

20

Two straight lines cross. One angle is 30° bigger than the angle next to it.

What is the smaller of the two angles?

A 75°

B 60°

C 90°

D 105°

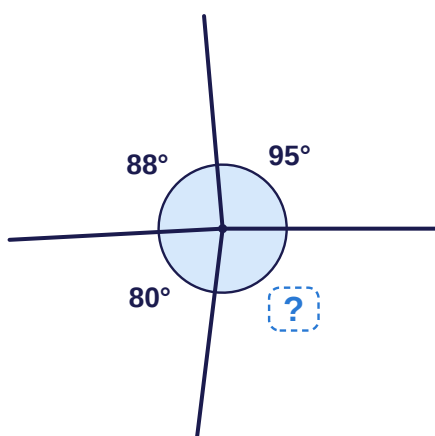
E 150°

Part 2: Write your answer

21

Four angles meet at a point.

How many degrees is the missing angle?



Write your answer in the boxes on the answer sheet, one digit in each box.

22

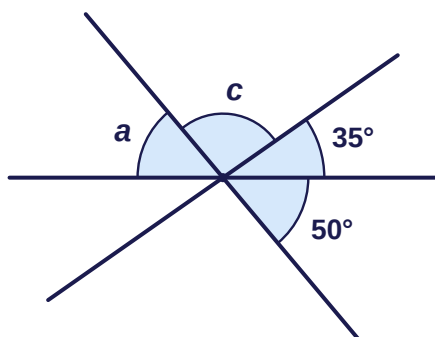
Five equal angles meet at a point. How many degrees is each angle?

Write your answer in the boxes on the answer sheet, one digit in each box.

23

Three straight lines cross at one point.

What is the size of angle c?



Write your answer in the boxes on the answer sheet, one digit in each box.

24

Two straight lines cross. One of the angles is four times as big as the angle next to it.

How many degrees is the larger angle?

Write your answer in the boxes on the answer sheet, one digit in each box.

25

What is the smaller angle, in degrees, between the hands of a clock at 2 o'clock?



Write your answer in the boxes on the answer sheet, one digit in each box.

26

Four angles meet at a point. The second is twice the first, the third is three times the first and the fourth is four times the first.

How many degrees is the largest angle?

Write your answer in the boxes on the answer sheet, one digit in each box.

27

What is the reflex angle, in degrees, between the hands of a clock at 5 o'clock?



Write your answer in the boxes on the answer sheet, one digit in each box.

Answer sheet

11+ Maths Practice Paper · Year 6 · Lesson 7.1: Angle properties

Name

Draw a firm line through the box next to your answer, like the example.

Part 1: Multiple choice

Ex	A	☒	B	☐	C	☐	D	☐	E	☐
1	A	☐	B	☐	C	☐	D	☐	E	☐
2	A	☐	B	☐	C	☐	D	☐	E	☐
3	A	☐	B	☐	C	☐	D	☐	E	☐
4	A	☐	B	☐	C	☐	D	☐	E	☐
5	A	☐	B	☐	C	☐	D	☐	E	☐
6	A	☐	B	☐	C	☐	D	☐	E	☐
7	A	☐	B	☐	C	☐	D	☐	E	☐
8	A	☐	B	☐	C	☐	D	☐	E	☐
9	A	☐	B	☐	C	☐	D	☐	E	☐
10	A	☐	B	☐	C	☐	D	☐	E	☐
11	A	☐	B	☐	C	☐	D	☐	E	☐
12	A	☐	B	☐	C	☐	D	☐	E	☐
13	A	☐	B	☐	C	☐	D	☐	E	☐
14	A	☐	B	☐	C	☐	D	☐	E	☐
15	A	☐	B	☐	C	☐	D	☐	E	☐
16	A	☐	B	☐	C	☐	D	☐	E	☐
17	A	☐	B	☐	C	☐	D	☐	E	☐
18	A	☐	B	☐	C	☐	D	☐	E	☐
19	A	☐	B	☐	C	☐	D	☐	E	☐
20	A	☐	B	☐	C	☐	D	☐	E	☐

Part 2: Write your answer, one digit in each box

21		25	
22		26	
23		27	
24			

Answers

For a parent to mark with. One mark for each question: the paper is out of 27. Talk through any your child got wrong, using the explanation.

Q	Answer	How to get it
1	A reflex angle	The curve goes the long way round, past a straight line: more than 180° , so it is reflex.
2	E about 230°	It is more than a straight line (180°) but less than three right angles (270°): about 230° .
3	D 97°	Add the angles you know: $84 + 86 + 93 = 263$. Then $360 - 263 = 97^\circ$.
4	D 62°	Angle b is opposite the 62° angle. Vertically opposite angles are equal.
5	C 180°	a and b sit together on one straight line, so $a + b = 180^\circ$. ($a = 118^\circ$ and $b = 62^\circ$.)
6	B 55°	On the top side of the flat line, $180 - 45 - 80 = 55^\circ$. Angle b is vertically opposite that angle, so $b = 55^\circ$.
7	E 55°	$180 - 70 = 110$, shared between the two equal angles: $110 \div 2 = 55^\circ$.
8	B 70°	$360 - 150 = 210$, shared between the three equal angles: $210 \div 3 = 70^\circ$.
9	D 150°	The 12 numbers split 360° into 12 gaps of $360 \div 12 = 30^\circ$. From the 12 to the 5 is 5 gaps: $5 \times 30 = 150^\circ$.
10	C 120°	The short way round, from the 8 to the 12 is 4 gaps of 30° : $4 \times 30 = 120^\circ$.
11	E 240°	One third of 360° is $360 \div 3 = 120^\circ$, so two thirds is $2 \times 120 = 240^\circ$.
12	D 36°	Together they make $1 + 4 = 5$ equal parts of 180° : $180 \div 5 = 36^\circ$. (The other is $4 \times 36 = 144^\circ$.)
13	A 205°	$70 + 85 = 155$, and $360 - 155 = 205^\circ$. It is more than 180° , so it is reflex.
14	E 90°	So far it has turned $90 + 180 = 270^\circ$. A full turn is 360° : $360 - 270 = 90^\circ$.
15	B 110°	Take the 40° off first: $180 - 40 = 140$, so the smaller angle is $140 \div 2 = 70^\circ$. The larger is $70 + 40 = 110^\circ$.
16	B 130°	The 50° angle and the angle just below the line on the other side are vertically opposite, so that one is 50° . It is on a straight line with the ?: $180 - 50 = 130^\circ$. The 40° is not needed.
17	C 45°	$360 \div 8 = 45^\circ$.
18	A 90°	$a + b + c$ is $1 + 2 + 3 = 6$ equal parts of 180° : $180 \div 6 = 30^\circ$. So $c = 3 \times 30 = 90^\circ$.
19	C 240°	The smaller angle is 4 gaps of 30° : $4 \times 30 = 120^\circ$. The reflex angle is the other way round: $360 - 120 = 240^\circ$.
20	A 75°	Next-door angles add up to 180° . Take the 30° off: $180 - 30 = 150$, and $150 \div 2 = 75^\circ$.
21	97	Add the angles you know: $95 + 88 + 80 = 263$. Then $360 - 263 = 97$.
22	72	$360 \div 5 = 72$.

Q	Answer	How to get it
23	95	Angle a is opposite the 50° angle, so $a = 50^\circ$. On the top side of the flat line: $c = 180 - 35 - 50 = 95$.
24	144	Next-door angles add up to 180° : $1 + 4 = 5$ parts, $180 \div 5 = 36$, and $4 \times 36 = 144$.
25	60	Each gap between two numbers is $360 \div 12 = 30^\circ$. From the 12 to the 2 is 2 gaps: $2 \times 30 = 60$.
26	144	Together they make $1 + 2 + 3 + 4 = 10$ equal parts of 360° : $360 \div 10 = 36$. The largest is $4 \times 36 = 144$.
27	210	The smaller angle is $5 \times 30 = 150^\circ$. The reflex angle is $360 - 150 = 210$.

Score: out of 27