

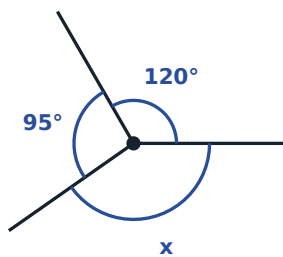
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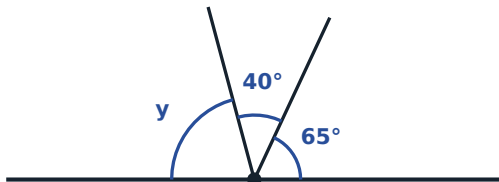
Stage 7 End-of-unit test 5 — mark scheme

27 questions · 44 marks · calculators are not allowed · allow about 45 minutes

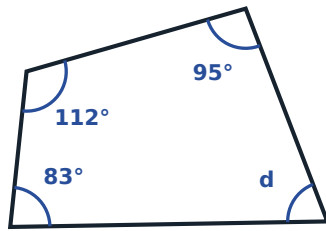
- 1 Work out angle x , in degrees. [2]

**Answer: 145**Angles at a point total 360° : $360 - 215 = 145^\circ$.

- 2 Work out angle y , in degrees. [2]

**Answer: 75**Angles on a straight line total 180° : $180 - 105 = 75^\circ$.

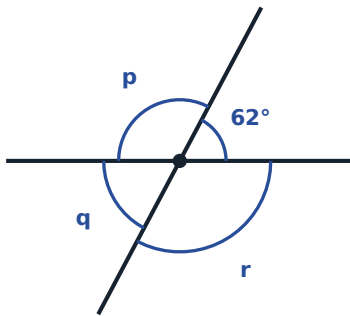
- 3 Work out angle **d**, in degrees. [2]



Answer: 70

The angles of a quadrilateral total 360° : $360 - 290 = 70^\circ$.

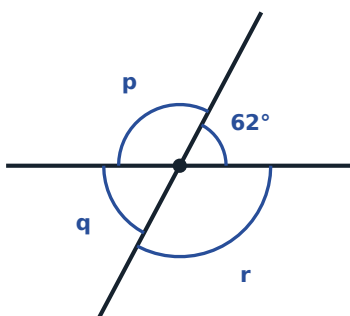
- 4 Two straight lines cross. Work out angle **q**, in degrees. [1]



Answer: 62

q is vertically opposite the 62° angle, and vertically opposite angles are equal.

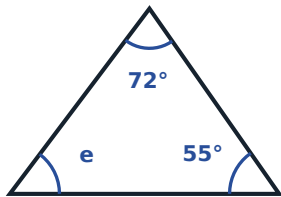
- 5 Using the same diagram, work out angle **p**, in degrees. [2]



Answer: 118

p and 62° lie on a straight line: $180 - 62 = 118^\circ$.

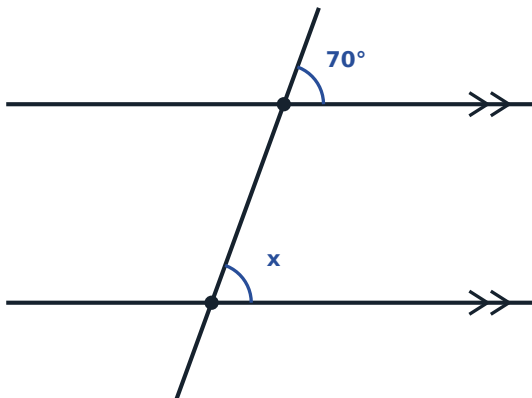
- 6 Work out angle **e** in this triangle, in degrees. [2]



Answer: 53

The angles of a triangle total 180° : $180 - 127 = 53^\circ$.

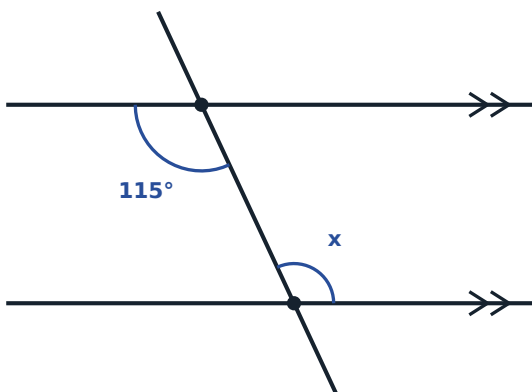
- 7 The lines with arrows are parallel. Work out angle **x**, in degrees. [2]



Answer: 70

The two angles are corresponding (an F shape), so they are equal.

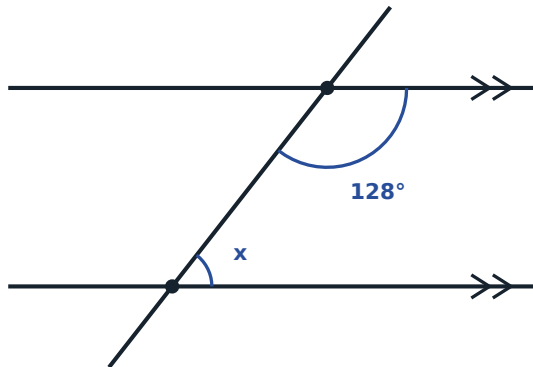
- 8 The lines with arrows are parallel. Work out angle **x**, in degrees. [2]



Answer: 115

The two angles are alternate (a Z shape), so they are equal.

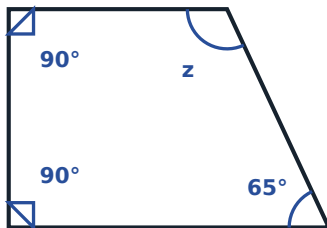
- 9 The lines with arrows are parallel. Work out angle x , in degrees. [2]



Answer: 52

The two angles are co-interior, so they add to 180° : $180 - 128 = 52^\circ$.

- 10 Work out angle z , in degrees. [2]



Answer: 115

$360 - 245 = 115^\circ$.

- 11 What do the angles around a point add up to, in degrees? [1]

Answer: 360

A full turn.

- 12 What do the angles of a quadrilateral add up to, in degrees? [1]

Answer: 360

Two triangles, so $2 \times 180^\circ$.

- 13 Why do the angles of a quadrilateral total 360° ? [2]

- ☐ It has four sides
- ☐ It splits into two triangles, each with 180°
- ☐ A full turn is 360°
- ☐ All its angles are 90°

Answer: It splits into two triangles, each with 180°

Draw one diagonal.

- 14** Two angles at a point are equal and the third is 140° . How big is each equal angle, in degrees? [2]

Answer: 110

$(360 - 140) \div 2 = 110^\circ$.

- 15** A quadrilateral has angles x° , $2x^\circ$, $3x^\circ$ and $4x^\circ$. What is x ? [2]

Answer: 36

$10x = 360$, so $x = 36$.

- 16** When two straight lines cross, the angles opposite each other are ... [1]

- ☐ equal
- ☐ supplementary
- ☐ always 90°
- ☐ unrelated

Answer: equal

They are vertically opposite angles.

- 17** Two lines cross so that one angle is 90° . How big is each of the other three, in degrees? [1]

Answer: 90

The lines are perpendicular.

- 18** On parallel lines cut by a transversal, alternate angles are ... [1]

- ☐ equal
- ☐ supplementary
- ☐ always 90°
- ☐ unrelated

Answer: equal

They form a Z shape.

- 19** Two lines cross. One angle is $(2x + 10)^\circ$ and the angle vertically opposite is 70° . What is x ? [2]

Answer: 30

$2x + 10 = 70$, so $x = 30$.

- 20** Which quadrilateral has exactly one pair of parallel sides? [1]

Answer: trapezium

That is its defining property.

- 21** Which quadrilateral has four equal sides but need not have right angles? [1]

Answer: rhombus

A square is the special case that does have right angles.

- 22** Is every square also a rectangle? [1]

- ☐ Yes
- ☐ No

Answer: Yes

A square has the four right angles a rectangle requires.

- 23** A parallelogram has one angle of 65° . What is the angle next to it, in degrees? [2]

Answer: 115

Adjacent angles add to 180° .

24 How is a right angle marked on a diagram? [1]

- ☐ With an arc
- ☐ With a small square
- ☐ With an arrow
- ☐ With a dot

Answer: With a small square

The standard mark for exactly 90° .

25 A fan has 8 equally spaced blades meeting at the centre. What is the angle between two neighbouring blades, in degrees? [2]

Answer: 45

$360 \div 8 = 45^\circ$.

26 A pie chart has three sectors. Two are 90° and 144° . What is the third, in degrees? [2]

Answer: 126

$360 - 234 = 126^\circ$.

27 A clock hand turns from 12 to 5. Through how many degrees has it turned? [2]

Answer: 150

$5 \times 30 = 150^\circ$.

Total: 44 marks