Fill in all 8 missing angles in the diagram using the clue below:

**Clue:** Every angle is either 50° or 130°.

Recall these usual rules of angles (always true):

- **Angles around a point add up to** 360°.
- **Angles on a straight line add up to** 180°.
- **Where straight lines cross, opposite angles are equal.**

With parallel lines there are 3 more rules:

- **Corresponding** angles are equal.
- **Alternate** angles are equal.
- **Allied** angles add up to 180°.

Key point:
When a line crosses a pair of parallel lines, there are only two different angles, one **acute** and one **obtuse**.
Angles on Parallel Lines

**Oxford Street**
Answer these questions on **corresponding** angles.

1. \( a = \)

Corresponding angles on parallel lines are equal

2. \( x = \quad y = \quad z = \)

Score: /5 Do you own this topic?

**Regent Street**
Answer these questions on **alternate** angles.

1. \( d = \quad e = \)

Alternate angles on parallel lines are equal

2. \( k = \quad l = \quad m = \quad n = \)

Score: /6 Do you own this topic?

**Bond Street**
Answer these questions on **allied** angles.

1. \( x = \quad y = \quad z = \)

Allied angles on parallel lines add up to 180°

2. \( x = \quad y = \quad z = \)

Score: /5 Do you own this topic?
The bearing of Leeds from Manchester is $052^\circ$. The bearing of Sheffield from Leeds is $180^\circ$. Leeds and Sheffield are the same distance away from Manchester.

Find the bearing of Sheffield from Manchester. The bearing of $A$ from $B$ is the angle you would need to turn, standing at $B$, from North clockwise to $A$. 

The bearing of A from B is the angle you would need to turn, standing at B, from North clockwise to A.
Angles on Parallel Lines SOLUTIONS

Oxford Street
Answer these questions on corresponding angles.

Corresponding angles on parallel lines are equal

1. $a = 125^\circ$

2. $x = 71^\circ$, $y = 30^\circ$, $z = 30^\circ$

Score: 5/5

Do you own this topic?

Regent Street
Answer these questions on alternate angles.

Alternate angles on parallel lines are equal

1. $d = 123^\circ$, $e = 57^\circ$

2. $k = 71^\circ$, $l = 29^\circ$, $m = 29^\circ$, $n = 151^\circ$

Score: 6/6

Do you own this topic?

Bond Street
Answer these questions on allied angles.

Allied angles on parallel lines add up to 180°

1. $x = 133^\circ$, $y = 47^\circ$

2. $x = 39^\circ$, $y = 27^\circ$, $z = 12^\circ$

Score: 5/5

Do you own this topic?
The bearing of Leeds from Manchester is 052°.
The bearing of Sheffield from Leeds is 180°.
Leeds and Sheffield are the same distance away from Manchester.

Find the bearing of Sheffield from Manchester.
The bearing of A from B is the angle you would need to turn, standing at B, from North clockwise to A.

Bearing: 128°