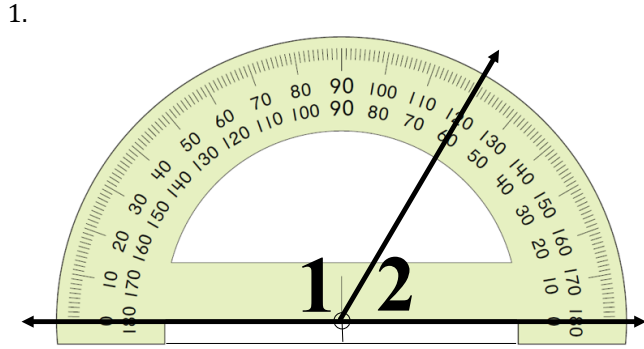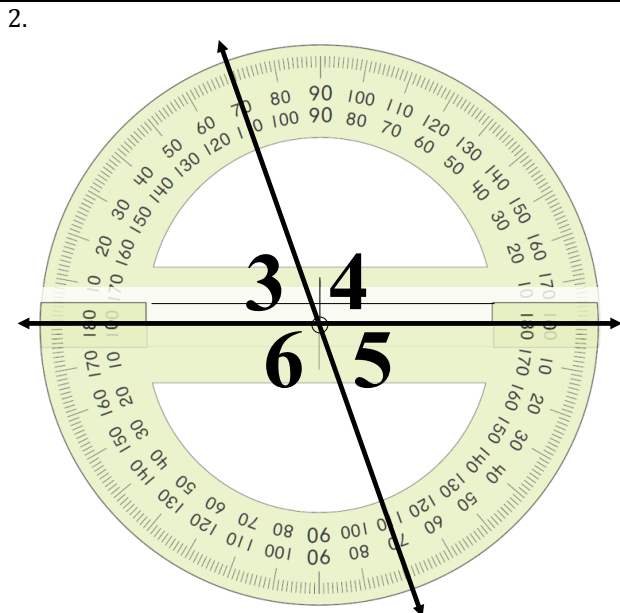Using a Protractor to Determine Angle Relationships

Use a protractor to measure each of the angles shown below.

1.

$m\angle 1 =$ _____

$m\angle 2 =$ _____

$m\angle 1 + m\angle 2 =$ _____ + _____ = _____

∠1 & ∠2 are called a ***linear pair***, because they are two attached angles that form a straight line.

2.

$m\angle 3 =$ _____ $m\angle 5 =$ _____

$m\angle 4 =$ _____ $m\angle 6 =$ _____

$m\angle 3 + m\angle 4 =$ _____ + _____ = _____

$m\angle 4 + m\angle 5 =$ _____ + _____ = _____

$m\angle 5 + m\angle 4 =$ _____ + _____ = _____

$m\angle 6 + m\angle 3 =$ _____ + _____ = _____

∠4 & ∠5 are a ***linear pair, because, together, they're a line***. What are the other 3 linear pairs?
∠____ & ∠____,   ∠____ & ∠____,   ∠____ & ∠____

∠3 & ∠5 are called **vertical angles**, because they are across from each other over two crossed lines. So are ∠4 & ∠6
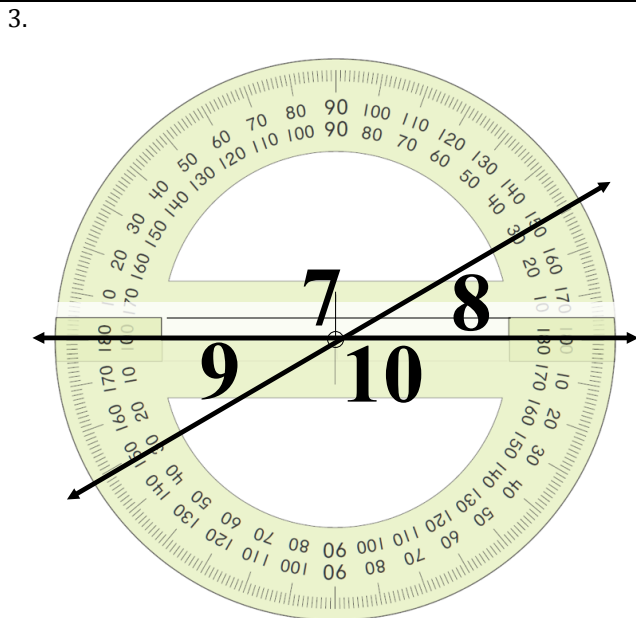
3.

$m\angle 7 =$ _____ $m\angle 9 =$ _____

$m\angle 8 =$ _____ $m\angle 10 =$ _____

$m\angle 7 + m\angle 8 =$ _____ + _____ = _____

$m\angle 8 + m\angle 10 =$ _____ + _____ = _____

$m\angle 10 + m\angle 9 =$ _____ + _____ = _____

$m\angle 9 + m\angle 10 =$ _____ + _____ = _____

What are the 4 linear pairs? ∠____ & ∠____, ∠____ & ∠____,
∠____ & ∠____,   ∠____ & ∠____

∠8 & ∠9 are **vertical angles**, because they're across an X from each other. What is the other vertical angle pair?
∠____ & ∠____

4. What do you notice about the angle measures of a linear pair?

5. The angle measures of vertical angles?

11 | 12
14 | 13

m

15 | 16
18 | 17

n

p
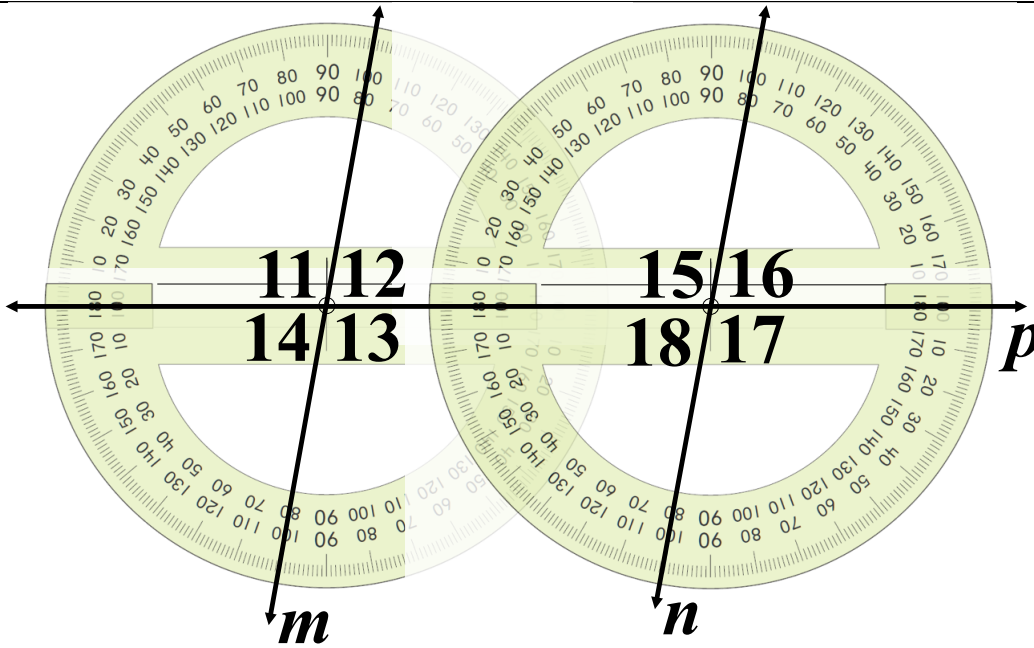
$m\angle 11 =$ _____

$m\angle 12 =$ _____

$m\angle 13 =$ _____

$m\angle 14 =$ _____

$m\angle 15 =$ _____

$m\angle 16 =$ _____

$m\angle 17 =$ _____
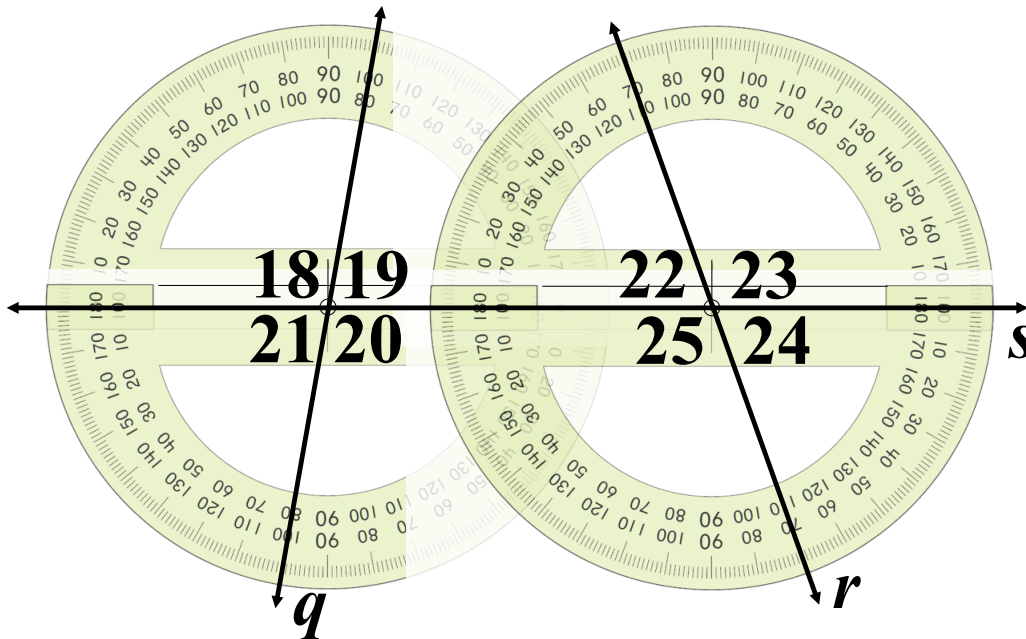
$m\angle 18 =$ _____

What do you notice about the angles?

What do you notice about lines *m* & *n*?

There are 8 linear pairs. What are they?

∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___

There are 4 vertical angle pairs. What are they?

∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___

18 | 19
21 | 20

q

22 | 23
25 | 24

r

s

$m\angle 18 =$ _____

$m\angle 19 =$ _____

$m\angle 20 =$ _____

$m\angle 21 =$ _____

$m\angle 22 =$ _____

$m\angle 23 =$ _____

$m\angle 24 =$ _____

$m\angle 25 =$ _____

What do you notice about the angles?

What do you notice about lines *q* & *r*?

There are 8 linear pairs. What are they?

∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___

There are 4 vertical angle pairs. What are they?

∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___,   ∠___ & ∠___

Name: _____