

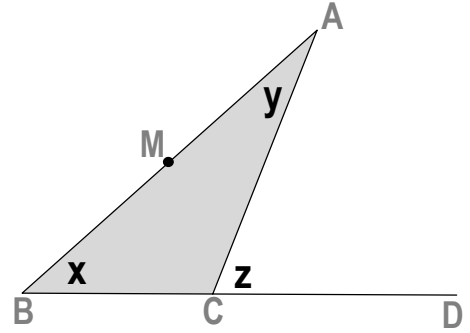
Name _____ Per _____

LO: I can use angle relationships to prove statements.

DO NOW On the back of this packet

(1) Angles: Exterior angle theorem: Proof by constructing a parallel line.

transparencies, dry erase markers, erasers compass



(a) The exterior angle theorem states that (see N12)

$z = \text{_____} + \text{_____}$

(b) Rotate $\angle ABC$ 180° around the midpoint of \overline{AB} .

(c) I know that $m\angle ABC = x$ because it is **given** in the diagram.

Therefore, I know that $m\angle BAC' = \text{_____}$ because _____

(d) I know that $m\angle C'AC = \text{_____} + \text{_____}$ because _____

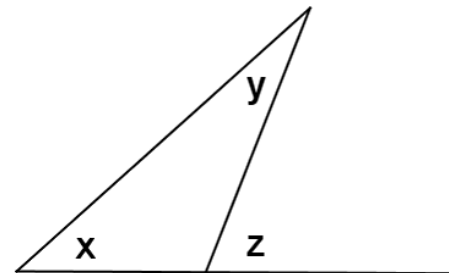
(e) I know that $\overline{C'A}$ is _____ to \overline{BC} because _____

(f) I know that $m\angle C'AC = m\angle ACD$ because _____

(g) I know that $x + y = z$ because _____

(2) Angles: Exterior angle theorem: Proof by angle relationship & algebra

transparencies, dry erase markers, erasers



(a) Add a w to the empty angle in the diagram

(b) I know that $x + y + w = 180$ because _____

(c) I know that $z + w = 180$ because _____

(d) I know that $x + y + w = z + w$ because _____

(e) I know that $x + y = z$ because _____

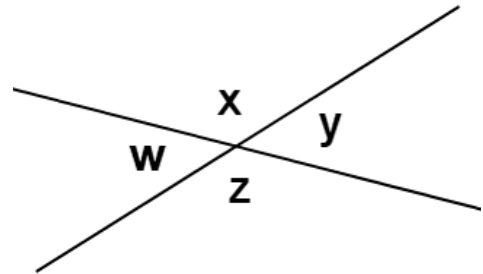
(3)
transparencies, dry
erase markers,
erasers

Angles: Proving relationships

When writing proofs, you can rely on **facts** that you know – facts about **angle relationships, transformations, parallel lines**. You can add **auxiliary lines** or **letters** to angles or points of intersection. You can construct to help you see relationships you might use in a proof. As you work through each proof in this lesson, refer to the notes pages N11 and N12. Prove each statement below. (You may not need all of the lines provided for you.)

(a) GiVEN: the diagram below

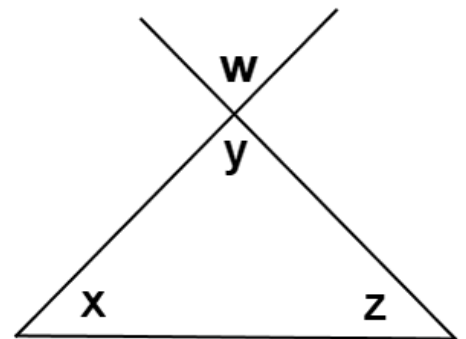
PROVE: *Vertical angles are equal.*



I know that . . .	because . . .

(b) GiVEN: the diagram below

PROVE: $w + x + z = 180^\circ$



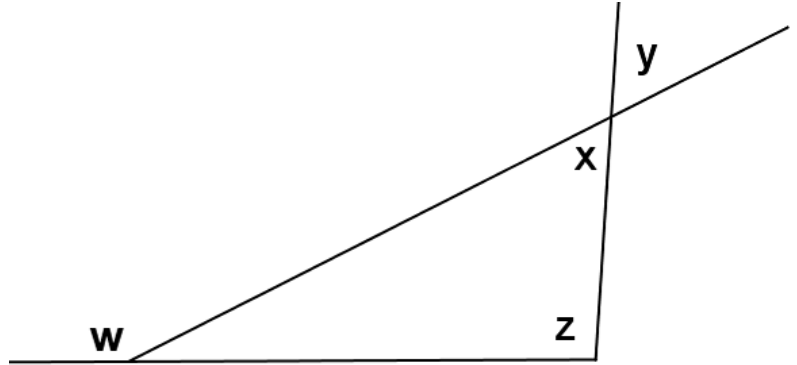
I know that . . .	because . . .

(3)
cont.

Angles: Proving relationships

(c) GIVEN: the diagram below

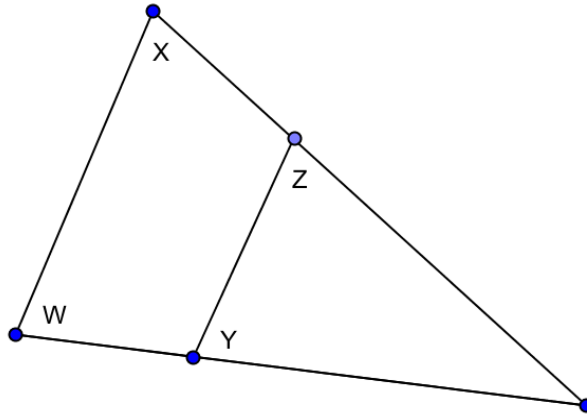
PROVE: $w = y + z$



I know that ...	because ...

(d) GIVEN: the diagram below

PROVE: $y + z = w + x$



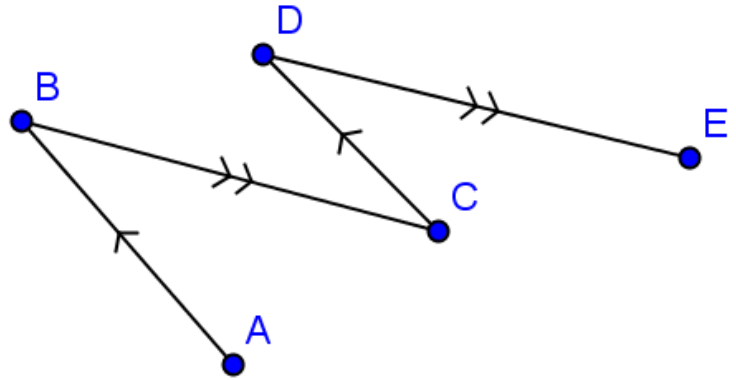
I know that ...	because ...

(3)
cont.

Angles: Proving relationships

(e) GIVEN: the diagram below

PROVE: $\angle ABC \cong \angle CDE$

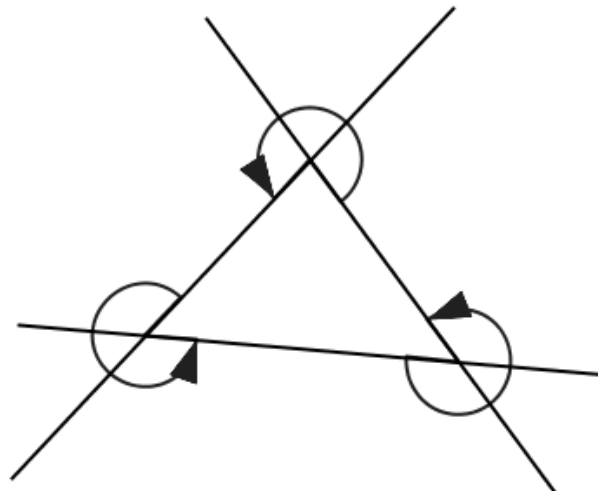


I know that ...

because ...

(f) GIVEN: the diagram below

PROVE: *the sum of the marked angles is 900°*



I know that ...

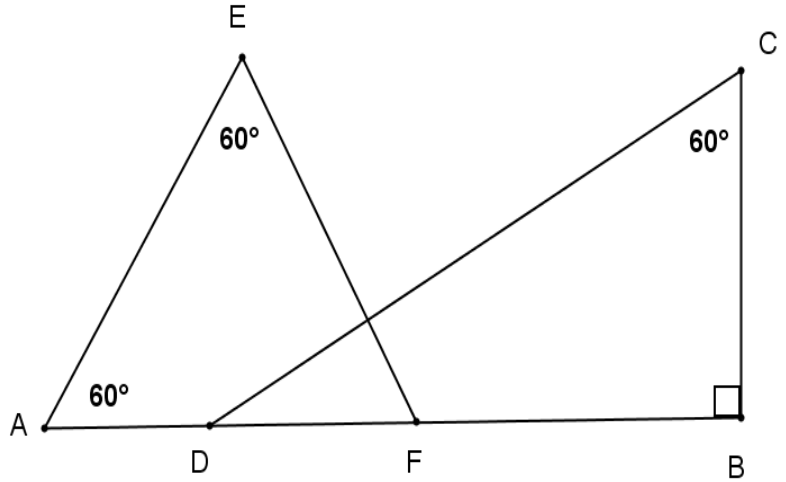
because ...

(3)
cont.

Angles: Proving relationships

(g) GIVEN: the diagram below

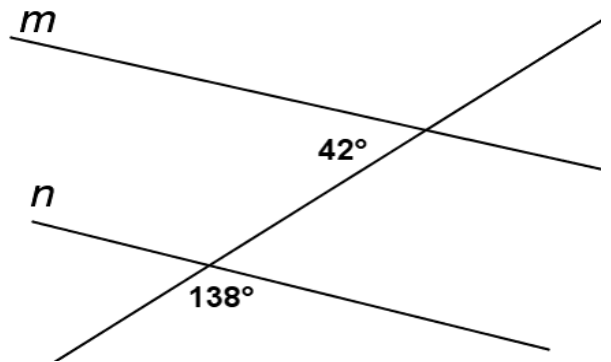
PROVE: $\overline{DC} \perp \overline{EF}$



I know that ...	because ...

(h) GIVEN: the diagram below

PROVE: $m \parallel n$



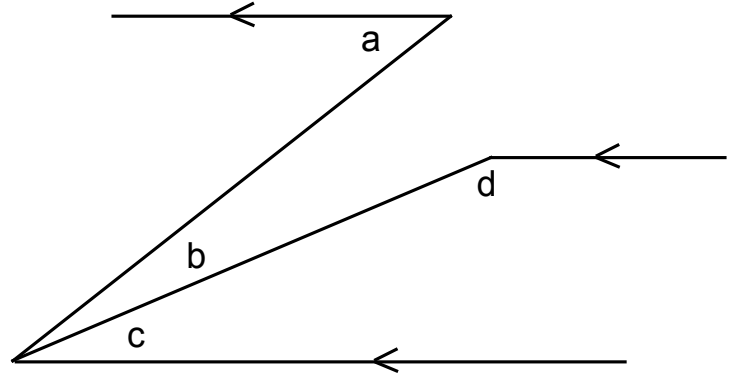
I know that ...	because ...

(3)
cont.

Angles: Proving relationships

(i) GIVEN: the diagram below

PROVE: $a + d - b = 180^\circ$ $a + d - b$

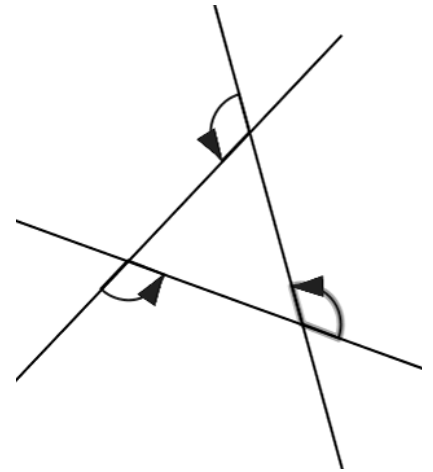


I know that ...

because ...

(j) GIVEN: the diagram below

PROVE: *the sum of the marked angles is 360°*



I know that ...

because ...

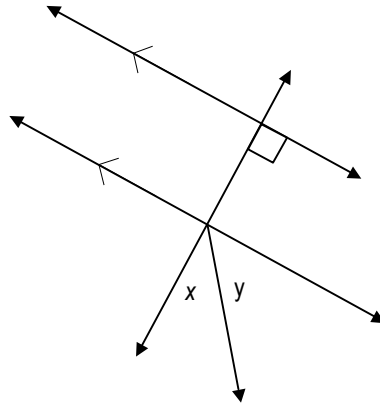
(4) **Exit Ticket**

ON THE LAST PAGE

(5) **Homework**
cont.

(1) GIVEN: the diagram below

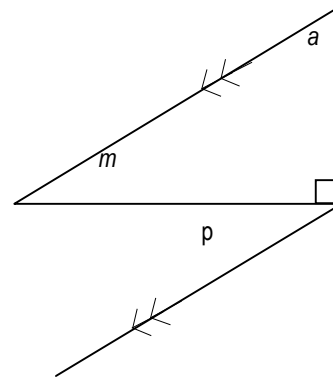
PROVE: $x + y = 90^\circ$



I know that ...	because ...

(2) GIVEN: the diagram below

PROVE: $a + p = 90^\circ$

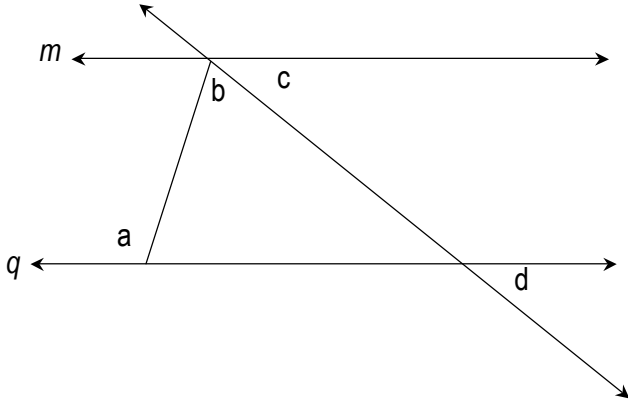


I know that ...	because ...

Exit Ticket Name _____ Date _____ Per _____ 3.5R

(1) The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following:

Given that $q \parallel m$, prove $a = b + d$.



DO NOW Name _____ Date _____ Per _____

3.5R

(1) Draw line m and construct lines p and q so that they are both perpendicular to line m .

IMPRESS ME: How can you use your compass with your construction to make a square? Explain or execute.

(2) Describe why the cartoon below is supposed to make people smile. REALLY think about it.

