



### Challenge

- Triangle Sum
- $m\angle 7$
- $90^\circ$
- $m\angle 5$
- $180^\circ$
- $180^\circ$
- $m\angle CDA$
- $m\angle DAB$
- $360^\circ$
- supplementary
- supplementary
- Converse of the Same-Side Interior Angles
- definition
- Yes; explanations will vary.
- No; the puck will have to land in the goal.
- No; explanations will vary.

### Problem Solving

- $m\angle C = 135^\circ$ ;  $m\angle D = 45^\circ$
- 15 in.
- 4.5 ft
- $65^\circ$
- B
- H
- D

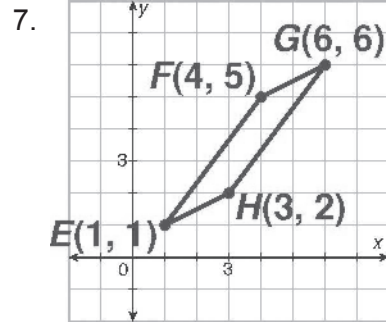
### Reading Strategies

- 100 mm
- $138^\circ$
- 86 mm
- $42^\circ$
- $138^\circ$
- 12 in.
- 18 in.
- 12 in.
- 24 in.
- 36 in.

## 7-2 CONDITIONS FOR PARALLELOGRAMS

### Practice A

- $\angle W \cong \angle Y$  and  $\angle X \cong \angle Z$
- $\overline{WX} \parallel \overline{ZY}$  and  $\overline{WZ} \parallel \overline{XY}$
- Possible answer:  $\angle W$  is supplementary to  $\angle X$  and to  $\angle Z$ .
- Possible answer:  $\overline{WX} \parallel \overline{ZY}$  and  $\overline{WX} \cong \overline{ZY}$
- $\overline{WY}$  and  $\overline{XZ}$  bisect each other.
- $\overline{WX} \cong \overline{ZY}$  and  $\overline{WZ} \cong \overline{XY}$



- 5; 5
- $\frac{4}{3}$ ;  $\frac{4}{3}$
- 4
- $\overline{BC}$
- $\overline{BC}$  moves up or down but stays vertical.

### Practice B

- $ABCD$  is a parallelogram.  $m\angle A = m\angle C = 72^\circ$  and  $m\angle B = m\angle D = 108^\circ$
- $EFGH$  is not a parallelogram.  $HI = 8.6$  and  $FI = 7.6$ .  $\overline{EG}$  does not bisect  $\overline{HF}$ .
- No, the diagonals do not necessarily bisect each other.
- Yes, the triangles with numbered angles are  $\cong$  by AAS. By CPCTC, the parallel sides are congruent.
- No,  $x^\circ + x^\circ$  may not be  $180^\circ$ .
- slope of  $\overline{JK} =$  slope of  $\overline{LM} = 1$ ; slope of  $\overline{KL} =$  slope of  $\overline{JM} = -\frac{2}{3}$ ;  $JKLM$  is a parallelogram.
- $PQ = RS = \sqrt{26}$ ;  $QR = PS = 5\sqrt{2}$ ;  $PQRS$  is a parallelogram.
- Possible answer:  $UV = TW = 2\sqrt{5}$ ; slope of  $\overline{UV} =$  slope of  $\overline{TW} = 2$ ;  $TUVW$  is a parallelogram.

### Practice C

- $A(4, 4)$ ,  $B(2, 5)$ ,  $C(-2, -5)$ ,  $D(0, 6)$
- Possible answer:  $\angle A \cong \angle C$