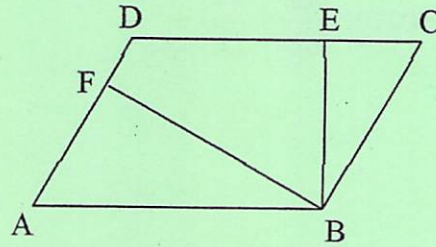


Practice 7-3

Name \_\_\_\_\_

1. In  $\square ABCD$ ,  $\overline{BE} \perp \overline{DC}$  and  $\overline{BF} \perp \overline{AD}$ .

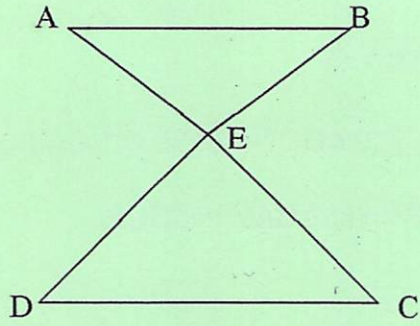
a) Prove:  $\triangle BAF \sim \triangle BCE$ .



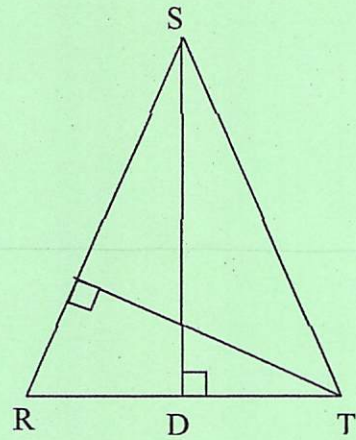
b) If  $AB = 16$ ,  $BC = 12$ , and  $FB = 14$ , find EB.

2. Given:  $\overline{AB}$  is parallel to  $\overline{DC}$ .

Prove:  $\frac{AE}{CE} = \frac{BE}{DE}$



3. Given: Isosceles  $\triangle RST$  with  $\overline{SR} \cong \overline{ST}$   
 $\angle TER$  and  $\angle SDT$  are right angles  
Prove:  $ER \bullet SD = TE \bullet DT$



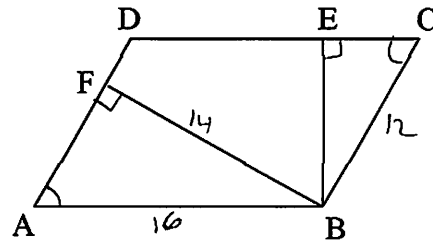
Practice 7-3

Name \_\_\_\_\_

(KEY)

1. In  $\square ABCD$ ,  $\overline{BE} \perp \overline{DC}$  and  $\overline{BF} \perp \overline{AD}$ .

a) Prove:  $\triangle BAF \sim \triangle BCE$ .



- 1)  $\overline{BE} \perp \overline{DC}$  and  $\overline{BF} \perp \overline{AD}$
- 2)  $\angle BFA$  and  $\angle BEC$  are rt. angles
- 3)  $\angle BFA \cong \angle BEC$
- 4)  $\angle A \cong \angle C$
- 5)  $\triangle BAF \sim \triangle BCE$

- 1) Given
- 2) If  $\perp$  lines, then right angles
- 3) All rt.  $\angle$ s are  $\cong$
- 4) Opposite angles in a parallelogram are  $\cong$
- 5) AA  $\sim$

b) If  $AB = 16$ ,  $BC = 12$ , and  $FB = 14$ , find  $EB$ .

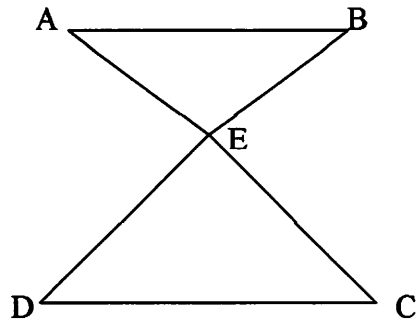
$$\frac{14}{16} = \frac{EB}{12}$$

$$\frac{16 \cdot EB}{16} = \frac{168}{16}$$

$$EB = 10.5$$

2. Given:  $\overline{AB}$  is parallel to  $\overline{DC}$ .

Prove:  $\frac{AE}{CE} = \frac{BE}{DE}$



1)  $\overline{AB} \parallel \overline{DC}$

2)  $\angle A \cong \angle C$   
 $\angle B \cong \angle D$

3)  $\triangle AEB \sim \triangle CED$

4)  $\frac{AE}{CE} = \frac{BE}{DE}$

1) Given

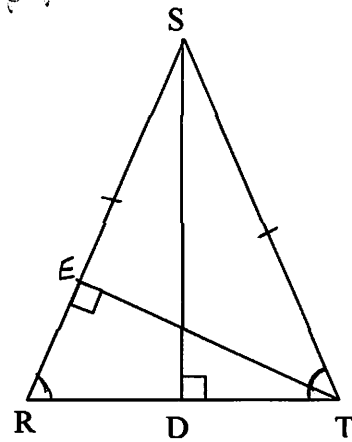
2) If parallel lines, then alternate interior  $\angle$ 's  $\cong$

3) AA  $\sim$

4) Corresponding sides of similar triangles are in proportion

3. Given: Isosceles  $\triangle RST$  with  $\overline{SR} \cong \overline{ST}$   
 $\angle TER$  and  $\angle SDT$  are right angles

Prove:  $ER \cdot SD = TE \cdot DT$



1)  $\overline{SR} \cong \overline{ST}$

$\angle TER$  and  $\angle SDT$  are right angles

2)  $\angle TER \cong \angle SDT$

3)  $\angle ERD \cong \angle STD$

4)  $\triangle ERT \sim \triangle DST$

5)  $\frac{ER}{DT} = \frac{TE}{SD}$

6)  $ER \cdot SD = TE \cdot DT$

1) Given

2) All rt. angles are  $\cong$

3) Angles opposite congruent sides are  $\cong$

4) AA  $\sim$

5) Corresponding sides of similar triangles are in proportion

6) product of means = product of extremes