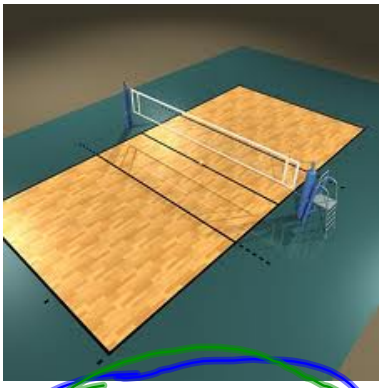
# Warm-Up



A volleyball court measures approximately 18 m by 9 m. Make a scale drawing of the court using a scale factor of 1/200. Show any calculations.

100cm = 1m

1000m = 1Km

18m → ×0.005 → 0.09m

9m → ×0.005 → 4.5cm

×0.005 → 0.045m

9cm

The length of a desk is 1.6 m. In a scale drawing that has a scale factor of 2/5 what is the length in cm?

$1.6m \times \frac{2}{5} = 0.64m$

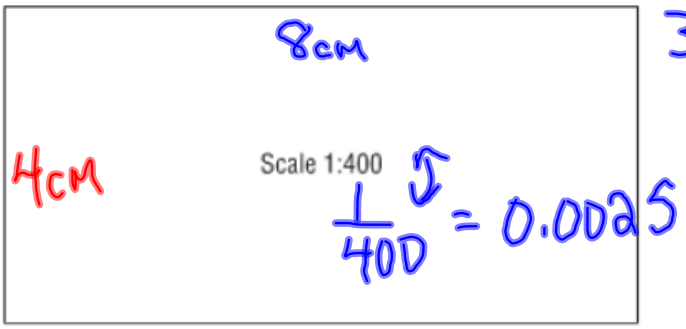
$1.6m \times 0.4 = 0.64m$

64cm

**13.** Here is a scale diagram of an outdoor hockey rink. The rink is 32 m long.

8 × 400 cm = 3200 cm

32 m




$\frac{1}{400} = 0.0025$

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a) Each hockey net is 1.82 m long. Suppose you had to include the hockey nets on the scale diagram. How long would each hockey net be on the diagram?

$1.82 \times 0.0025 = 0.00455\text{m}$

0.455cm

4.55mm

b) What is the width of the rink?

$4 \times 400 = 1600\text{cm}$

16m

8

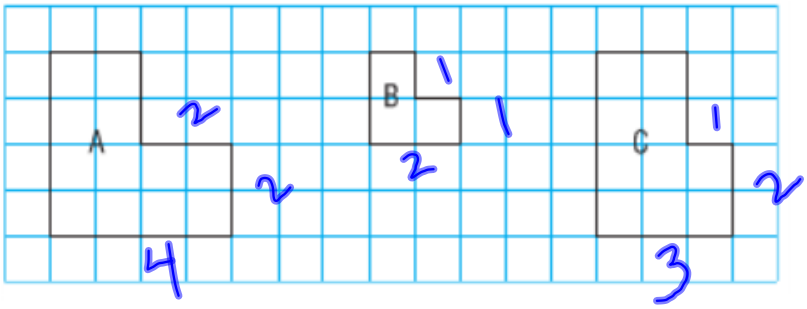
4 | reduction

32

| original

# SECTION 7.3
# SIMILAR POLYGONS

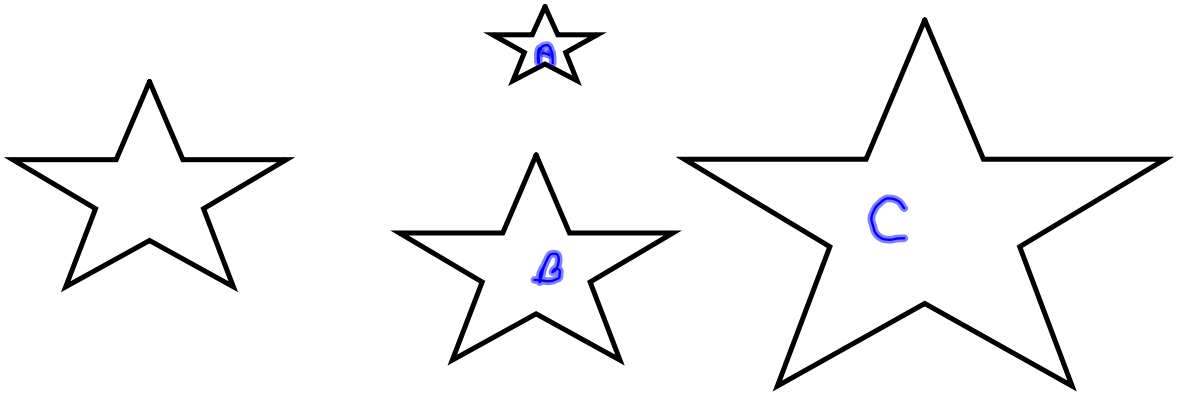
Which pair of polygons below show an enlargement or a reduction?
Explain your choice.

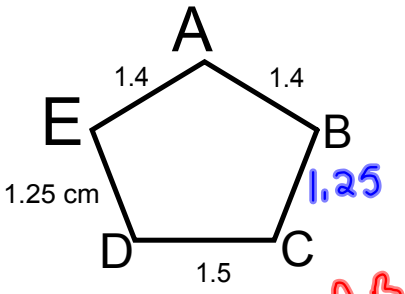


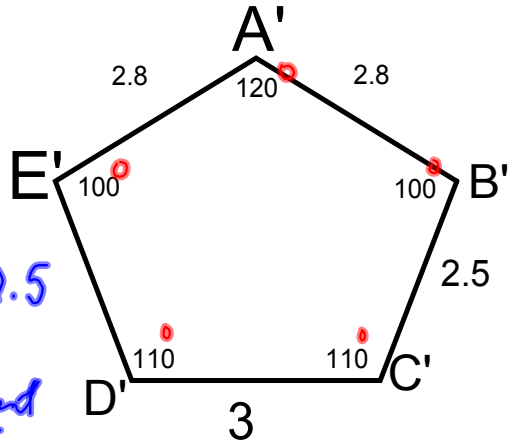

When one polygon is an enlargement or a reduction of another polygon, we say the polygons are **similar**.

Similar polygons have:

1. the same shape,
2. but not necessarily the same size.






$\frac{AB}{A'B'} = \frac{1.4}{2.8} = \frac{1}{2}$ 2.5

enlargement / original

| List the corresponding sides | Ratio for corresponding sides | List the corresponding angles |
|---|---|---|
| AB corresponds A'B' | $\frac{A'B'}{AB} = \frac{2.8}{1.4} = 2$ | $\angle A = \angle A'$ |
| $BC \parallel B'C'$ | $\frac{B'C'}{BC} = \frac{2.5}{1.25} = 2$ | $\angle B = \angle B'$ |
| $CD \parallel C'D'$ | $\frac{C'D'}{CD} = \frac{3}{1.5} = 2$ | $\angle C = \angle C'$ |
| $DE \parallel D'E'$ | $\frac{D'E'}{DE} = \frac{2.5}{1.25} = 2$ | $\angle D = \angle D'$ |
| $EA \parallel E'A'$ | $\frac{E'A'}{EA} = \frac{2.8}{1.4} = 2$ | $\angle E = \angle E'$ |

## Similarity statement

pentagon $AEDCB \sim A'E'D'C'B'$

In similar polygons:

- Pairs of corresponding sides have lengths in the same ratio, that is, the lengths are proportional
- Corresponding angles are equal

Give a similarity [ ~ ] statement

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