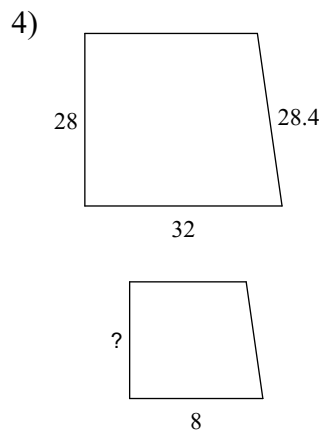
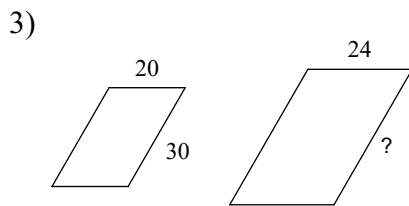
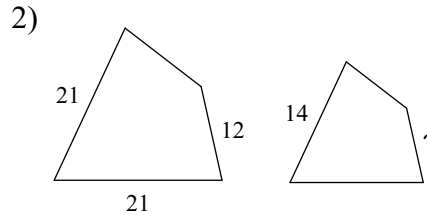
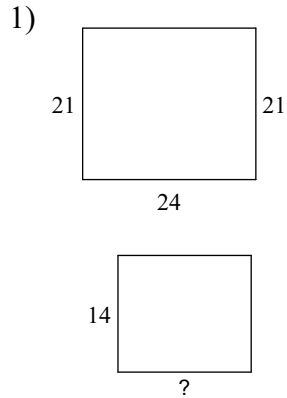
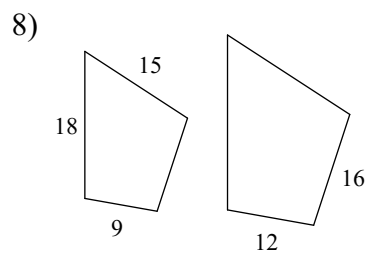
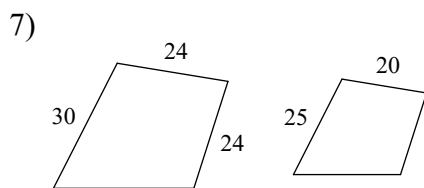
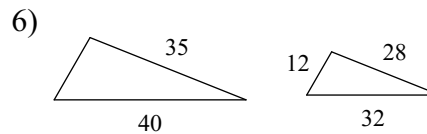
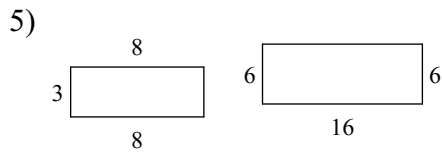


# Scale Factors

The polygons in each pair are similar. Find the missing side length.

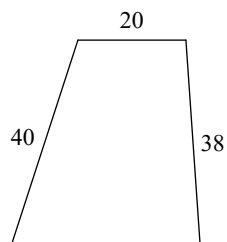
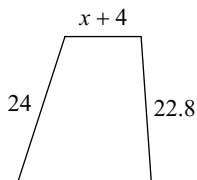


The polygons in each pair are similar. Find the scale factor of the smaller figure to the larger figure.

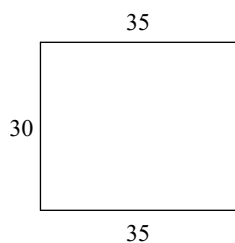
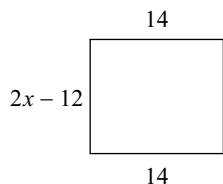


Solve for  $x$ . The polygons in each pair are similar.

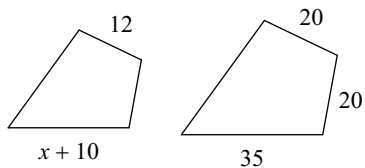
9)



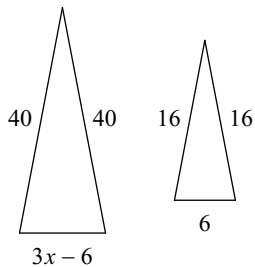
11)



10)



12)



13) A scale model has a length of 10cm. The original had a length of 80cm. Determine the scale factor.

14) A scale model has a length of 8cm. The original had a length of 20cm. Determine the scale factor.

15) A scale model has a length of 70cm. The original had a length of 30cm. Determine the scale factor.

16) A scale model has a length of 40cm. The original had a length of 25cm. Determine the scale factor.

17) A scale model has a length of 6cm. The original had a length of 2m. Determine the scale factor.

18) A scale model has a length of 40cm. The original had a length of 8km. Determine the scale factor.

**The scale factor between two similar figures is given. The surface area and volume of the smaller figure are given. Find the surface area and volume of the larger figure.**

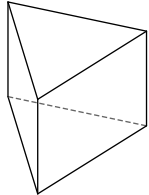
19) scale factor = 1 : 5  
SA = 15 yd<sup>2</sup>  
V = 30 yd<sup>3</sup>

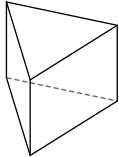
20) scale factor = 2 : 5  
SA = 8 ft<sup>2</sup>  
V = 104 ft<sup>3</sup>

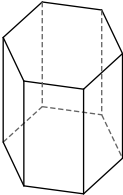
21) scale factor = 2 : 3  
SA = 52 in<sup>2</sup>  
V = 168 in<sup>3</sup>

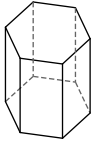
22) scale factor = 2 : 9  
SA = 24 cm<sup>2</sup>  
V = 176 cm<sup>3</sup>

**Each pair of figures is similar. Use the information given to find the scale factor of the figure on the left to the figure on the right.**

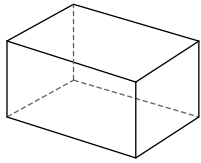
23)   
SA = 343 cm<sup>2</sup>

  
SA = 252 cm<sup>2</sup>

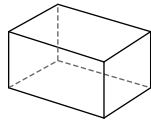
24)   
SA = 704 ft<sup>2</sup>

  
SA = 275 ft<sup>2</sup>

25)

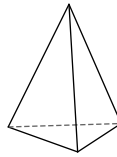


$$V = 13824 \text{ km}^3$$

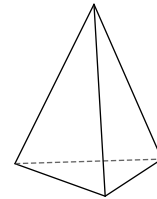


$$V = 9261 \text{ km}^3$$

26)



$$V = 3672 \text{ ft}^3$$



$$V = 5831 \text{ ft}^3$$

**Some information about the surface area and volume of two similar solids has been given. Find the missing value.**

27) Solid #1  
 $SA = 99 \text{ mi}^2$   
 $V = 675 \text{ mi}^3$

Solid #2  
 $SA = 44 \text{ mi}^2$   
 $V = ?$

28) Solid #1  
 $SA = 1280 \text{ yd}^2$   
 $V = 9216 \text{ yd}^3$

Solid #2  
 $SA = ?$   
 $V = 13122 \text{ yd}^3$

- 29) 1. 16  
 2. 8  
 3. 36  
 4. 7  
 5. 0.5  
 6. 0.8  
 7. 0.83  
 8. 0.75  
 9. 8  
 10. 11  
 11. 12  
 12. 7  
 13. 0.125  
 14. 0.4

- 30) 15. 2.3333  
 16. 1.6  
 17. 0.03  
 18. 0.00005 or  $5 \times 10^{-5}$   
 19.  $sa=375$   $v=3750$   
 20.  $sa=50$   $v=1625$   
 21.  $sa=117$   $v=567$   
 22.  $sa=486$   $v=16038$   
 23. 1.166667  
 24. 1.6  
 25. 1.1428  
 26. 0.85714  
 27.  $v=200$   
 28.  $sa=1620$

## Answers to Scale Factors

- |  |  |   |                              |
|--|--|---|------------------------------|
| 1) 16  | 2) 8   | 3) 36   | 4) 7                         |
| 5) 1 : 2   | 6) 4 : 5   | 7) 5 : 6  | 8) 3 : 4                     |
| 9) 8   | 10) 11   | 11) 12  | 12) 7                        |
| 13) 1:8  | 14) 2:5  | 15) 7:3   | 16) 8:5                      |
| 17) 3:100  | 18) 1:20 000   | 19) $SA = 375 \text{ yd}^2$ , $V = 3750 \text{ yd}^3$ |                              |
| 20) $SA = 50 \text{ ft}^2$ , $V = 1625 \text{ ft}^3$   | 21) $SA = 117 \text{ in}^2$ , $V = 567 \text{ in}^3$ |   |                              |
| 22) $SA = 486 \text{ cm}^2$ , $V = 16038 \text{ cm}^3$ | 23) 7 : 6  | 24) 8 : 5   |                              |
| 25) 8 : 7  | 26) 6 : 7  | 27) $V = 200 \text{ mi}^3$                            | 28) $SA = 1620 \text{ yd}^2$ |
| 29)  | 30)  |   |                              |