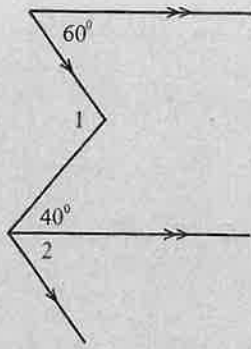


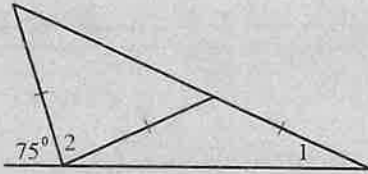
22.



$\angle 1 =$ _____

$\angle 2 =$ _____

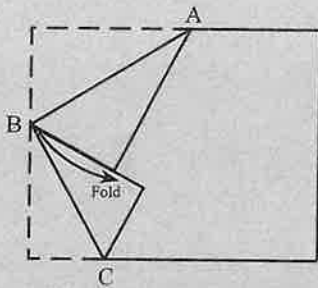
23.



$\angle 1 =$ _____

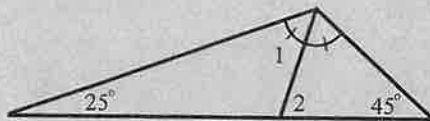
$\angle 2 =$ _____

24.



Fold a piece of paper twice such that the folds meet.
What is $\angle ABC$ of the fold? Why?

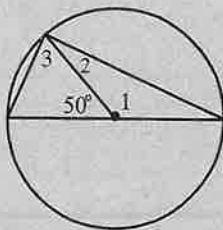
25.



$\angle 1 =$ _____

$\angle 2 =$ _____

26.

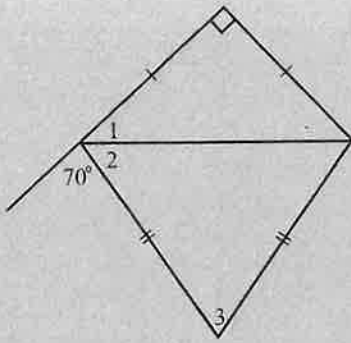


$\angle 1 =$ _____

$\angle 2 =$ _____

$\angle 3 =$ _____

27.

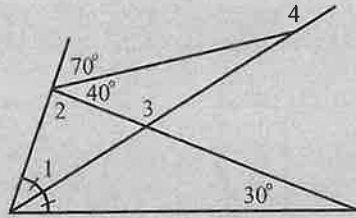


$\angle 1 =$ _____

$\angle 2 =$ _____

$\angle 3 =$ _____

28.



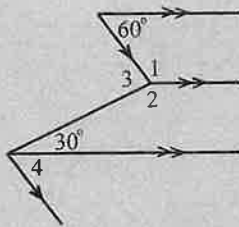
$\angle 1 =$ _____

$\angle 2 =$ _____

$\angle 3 =$ _____

$\angle 4 =$ _____

29.



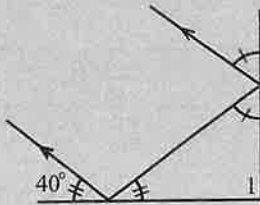
$\angle 1 =$ _____

$\angle 2 =$ _____

$\angle 3 =$ _____

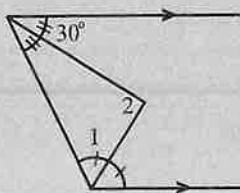
$\angle 4 =$ _____

30.



$\angle 1 =$ _____

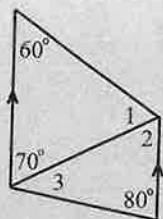
31.



$\angle 1 =$ _____

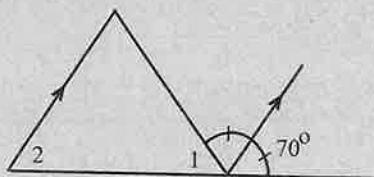
$\angle 2 =$ _____

32.



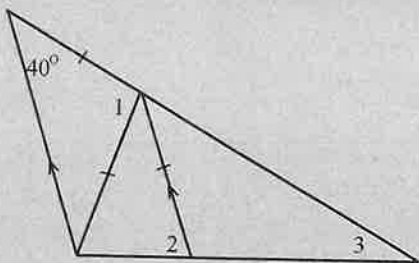
$\angle 1 =$ _____
 $\angle 2 =$ _____
 $\angle 3 =$ _____

33.



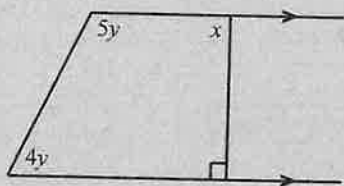
$\angle 1 =$ _____
 $\angle 2 =$ _____

34.



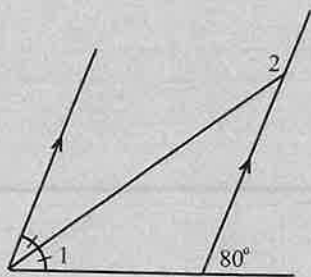
$\angle 1 =$ _____
 $\angle 2 =$ _____
 $\angle 3 =$ _____

35.



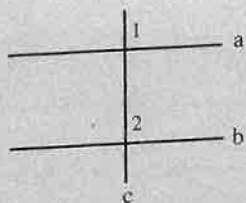
$x =$ _____
 $y =$ _____

36.



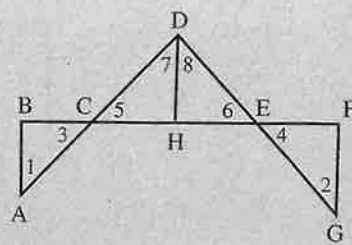
$\angle 1 =$ _____
 $\angle 2 =$ _____

21. Given: $c \perp b$
 $a \parallel b$
 Prove: $c \perp a$



| Statement | Reason |
|-----------|--------|
| | |
| | |
| | |

22. Given: $AB \perp BF$
 $FG \perp BF$
 $DH \perp BF$
 $\angle 1 = \angle 2$

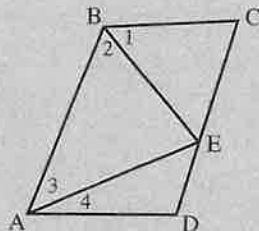


Prove: $\angle 7 = \angle 8$

| Statement | Reason |
|-----------|--------|
| | |
| | |
| | |

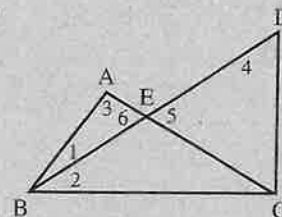
Challenge proofs

23. Given: $BC \parallel AD$
 $\angle 1 = \angle 2$
 $\angle 3 = \angle 4$
 Prove: $BE \perp AE$



| Statement | Reason |
|-----------|--------|
| | |
| | |
| | |

24. Given: BD bisects $\angle ABC$
 $AB \perp AC$
 $DC \perp BC$
 Prove: $\angle 4 = \angle 5$



| Statement | Reason |
|-----------|--------|
| | |
| | |
| | |

2.3 Exercise Set

1. Find the sum of the interior angles of the polygons for each number of sides.

- | | | | |
|--------|-------|--------|-------|
| a) 20 | _____ | b) 17 | _____ |
| c) 39 | _____ | d) 23 | _____ |
| e) x | _____ | f) y | _____ |

2. One interior angle of a regular polygon is given. Find the number of sides.

- | | | | |
|----------------|-------|----------------|-------|
| a) 90° | _____ | b) 156° | _____ |
| c) 144° | _____ | d) 179° | _____ |
| e) 160° | _____ | f) 165° | _____ |

3. The number of sides of a regular polygon is given. Calculate the measure of each interior angle.

- | | | | |
|--------|-------|--------|-------|
| a) 4 | _____ | b) 8 | _____ |
| c) 13 | _____ | d) 17 | _____ |
| e) x | _____ | f) y | _____ |

4. The sum of the interior angles of a regular polygon is given. Calculate the measure of each exterior angle.

- | | | | |
|-----------------|-------|-----------------|-------|
| a) 2880° | _____ | b) 1620° | _____ |
| c) 3780° | _____ | d) 3420° | _____ |
| e) 4860° | _____ | f) 7740° | _____ |

12. Two circles have areas of 16π and 25π . Find the ratio of their circumferences.

13. Two regular pentagons have perimeters 8 cm and 16 cm. What is the ratio of their areas?

Section 1.5

14. A sphere has radius 3 and a hemisphere has radius 6. Compare the ratio of the volume of the sphere to the volume of the hemisphere.

15. The ratio of the volume of two cubes is 125 to 64. What is the ratio of their surface areas?

16. Two spheres of the same density have a ratio of 4 to 9 in surface area. If the small sphere weighs 10 kg, what does the large sphere weigh?

17. A cylinder has its height doubled and its radius halved. What is the ratio of the volumes of the original cylinder to the modified cylinder?

18. A toy boat has a scale of 1:40 to an actual boat. If the mast on the toy boat weighs 216 grams, how many metric tons does the actual boat's mast weigh? (1000 g = 1 kg, 1000 kg = 1 t)

19. A sphere is inscribed in a right circular cylinder. What is the ratio of the volume of the sphere to the volume of the cylinder?