

3. (a) (i) $w = -2$
 (ii) $x = -\frac{15}{19}$
 (iii) $y = 29$
 (c) (i) $p = -\frac{1}{6}$
 (ii) $q = -\frac{1}{19}$
 (iii) $r = 1\frac{1}{6}$
- (b) (i) $b = \frac{2}{9}$
 (ii) $c = 8$
 (iii) $d = 3$
 (d) (i) $s = -\frac{1}{5}$ or $\frac{3}{15}$
 (ii) $t = -46$ or 54
 (iii) $u = -\frac{2}{11}$ or 1.23
4. $z = 65xy$
5. $t = 13\frac{1}{3}s$ minutes
6. $x = 4$
 $y = 7$

CHAPTER 4 POLYGONS

SELF PRACTICE 4.1

1. (a) Irregular polygon (b) Irregular polygon
 (c) Regular polygon (d) Regular polygon
 (e) Irregular polygon (f) Regular polygon
 (g) Regular polygon (h) Regular polygon
 (i) Regular polygon
2. (a) One axis of symmetry (b) 2 axis of symmetry
 (c) No axis of symmetry (d) No axis of symmetry

3.

Name of polygon	Number of sides	Number of vertices	Number axis of symmetry
Hexagon	6	6	6
Heptagon	7	7	7
Octagon	8	8	8
Nonagon	9	9	9

4. Students answer
 5. Students answer

SELF PRACTICE 4.2

1.

Number of triangles in a polygon	Sum of interior angle
3	540°
4	720°
5	900°
6	$1\ 080^\circ$
7	$1\ 260^\circ$

2. (a) Interior angle: a, g, e, c
 Exterior angle: b, d, f, h
 (b) Interior angle: a, b, c, d, e
 Exterior angle: f, g, h, i, j
3. (a) $x = 150^\circ$ (b) $x = 100^\circ$
 (c) $x = 22^\circ$ (d) $x = 54^\circ$
4. (a) $p = 80^\circ$ (b) $p = 68^\circ$
 $q = 55^\circ$ $q = 100^\circ$
 $r = 125^\circ$ $r = 88^\circ$
5. (a) $a + b + c = 300^\circ$ (b) $a + b + c = 170^\circ$
 (c) $a + b + c = 265^\circ$ (d) $a + b + c = 254^\circ$
6. (a) 7 sides (b) 8 sides (c) 9 sides
7. (a) Decagon (b) $y = 144^\circ$
8. $x = 117^\circ$

GENERATING EXCELLENCE

1. (a) Students answer (b) Students answer
2. (a) $p = 40^\circ$ (b) $p = 45^\circ$ (c) $p = 75^\circ$
 $q = 135^\circ$ $q = 95^\circ$ $q = 140^\circ$
 $r = 95^\circ$ $r = 50^\circ$ $r = 105^\circ$
3. (a) $x = 50^\circ$ (b) $x = 42.5^\circ$ (c) $x = 80^\circ$
4. (a) $\frac{360^\circ}{45^\circ} = 8$ sides (b) $\frac{360^\circ}{36^\circ} = 10$ sides
 (c) $\frac{360^\circ}{40^\circ} = 9$ sides (d) $\frac{360^\circ}{30^\circ} = 12$ sides
5. (a) $x + y = 215^\circ$ (b) $x + y = 180^\circ$
 (c) $a + b + c + d = 425^\circ$
6. Students answer
7. 17 sides
8. $p + q = 276^\circ$
9. $\angle CBM = 58^\circ$
10. (a) $h = 20^\circ$
 (b) Interior angle = 140°
 Exterior angle = 40°
 (c) Number of sides, $n = \frac{360^\circ}{40^\circ} = 9$, nonagon
11. $x = 54^\circ$
12. Cannot, because the sum of interior angles is $(n - 2) \times 180^\circ$ when $n = 3, 4, \dots$
13. 12 sides
14. $x = 72^\circ$
15. $x = 12^\circ$