Fully-Worked Solutions

PRACTICE 9

Section A

1 Number of diagonals

$= \frac{n(n-3)}{2}$

$= \frac{6(3)}{2}$

$= 9$

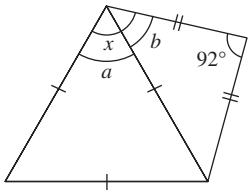
Answer: D

2 Answer: B

3 $x = \frac{38°}{2} = 19°$

Answer: A

4



$a = \frac{180°}{3} = 60°$

$b = \frac{180° - 92°}{2} = 44°$

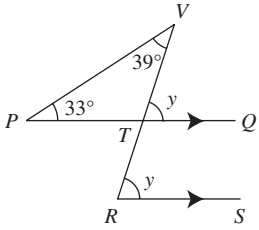
$x = a + b$

$= 60° + 44°$

$= 104°$

Answer: B

5



$y = 33° + 39°$

$= 72°$

Answer: A

6 $x + 16° + 81° = 123°$

$x + 97° = 123°$

$x = 26°$

$y = 180° - 26° - 81°$

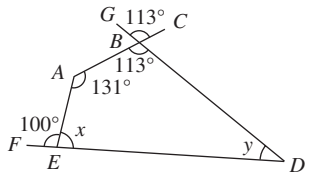
$= 73°$

$y - x = 73° - 26°$

$= 47°$

Answer: B

7



$x = 180° - 100° = 80°$

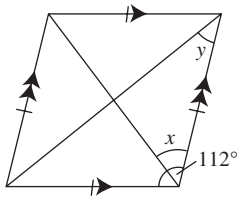
$y = 360° - 113° - 131° - 80°$

$= 36°$

$x - y = 80° - 36° = 44°$

Answer: B

8



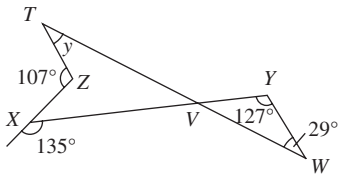
$x = \frac{112°}{2} = 56°$

$y = 180° - 56° - 90°$

$= 34°$

Answer: B

9



$\angle YVW = \angle TVX$

$= 180° - 127° - 29°$

$= 24°$

Reflex angle TZX

$= 360° - 107°$

$= 253°$

$\angle ZXV = 180° - 135°$

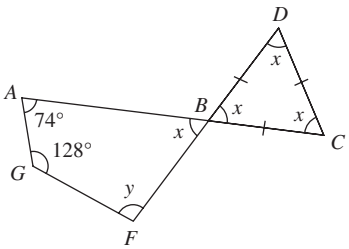
$= 45°$

$y = 360° - 24° - 45° - 253°$

$= 38°$

Answer: C

10



$x = \frac{180°}{3} = 60°$

$y = 360° - 128° - 74° - 60°$

$= 98°$

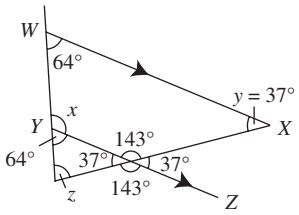
$y - x = 98° - 60°$

$= 38°$

Answer: A

11 $\angle UPQ = USQ = 72°$
$\angle PRT = 180° - 72° - 40°$
$= 68°$
Answer: B

12



$x = 180° - 64° = 116°$
$z = 180° - 64° - 37°$
$= 79°$
$y = 37°$
Answer: D

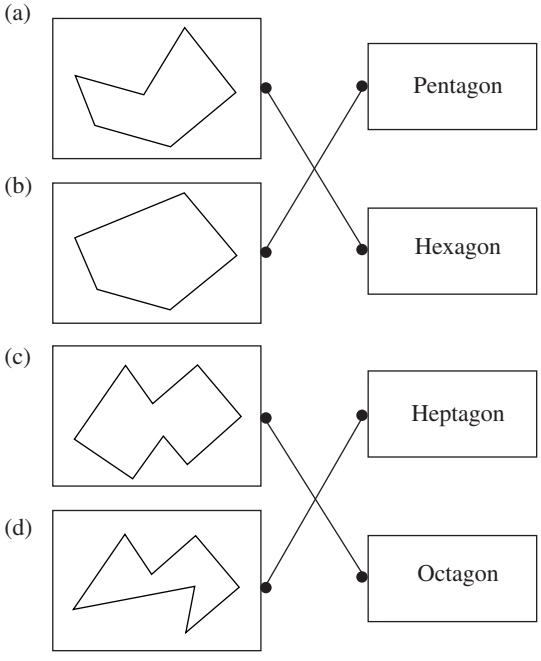
Section B

1 (a)

Square	Isosceles triangle	Rectangle
Kite	Parallelogram	Rhombus

(b) (i) Number of diagonals of hexagon
$= \frac{6(6-3)}{2}$
$= 9$
(ii) Number of diagonals of octagon
$= \frac{8(8-3)}{2}$
$= 20$

2 (a)



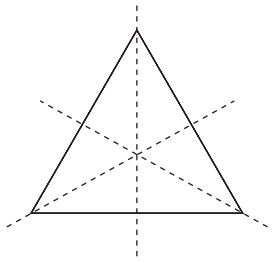
(b)
(c)
(d)

3 (a) ✗ (b) ✓
(c) ✗ (d) ✓

4 (a) FALSE (b) TRUE
(c) TRUE (d) FALSE

Section C

1 (a) (i) Equilateral triangle
(ii)



Number of axes of symmetry = 3
(b) $x = 180° - 71° - 55°$
$= 54°$
$180 - 94° = 86°$
$79° - 54° = 25°$
$y = 360° - 86° - 123° - 25°$
$= 126°$
(c) $\angle TYZ = 180° - 137°$
$= 43°$
$\angle VTZ = \angle TVZ$
$= 43° + 22°$
$= 65$
$x = 180° - 2(65°) = 50°$

2 (a) (i) Nonagon
(ii) Number of vertices = 9
Number of diagonals
$= \frac{9(9-3)}{2}$
$= 27$
(b) $\angle CDF = \angle CFD$
$= \frac{180° - 28°}{2}$
$= 76°$
$a = 180° - 76° = 104°$
$\angle AFE = 126° - 76°$
$= 50°$
$b = 90° - 50°$
$= 40°$
(c) $\angle SUT = \angle UST$
$= \frac{180° - 36°}{2}$
$= 72°$
$\angle SVU = \angle VSU$
$= \angle SUV$
$= \frac{180°}{3}$
$= 60°$
$\angle VUT = \angle SUT - \angle SUV$
$= 72° - 60°$
$= 12°$