Fully-worked Solutions

Practice 9

Formative Practice

1 A Wrong
B Wrong
C Correct
D Wrong
Answer: **C**

2 (a) True (b) False
(c) False

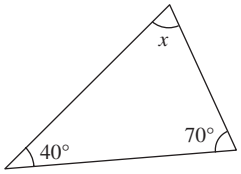
3 (a) 5 (b) 5
(c) 5 (d) Pentagon

4 Answer: **D**

5 (a) Scalene triangle
(b) Isosceles triangle
(c) Equilateral triangle

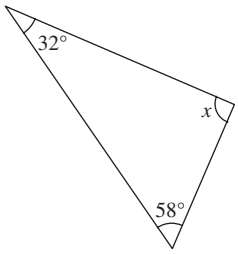
6 (a) Equilateral triangle
(b) Isosceles triangle
(c) Right-angled triangle

7 (a)



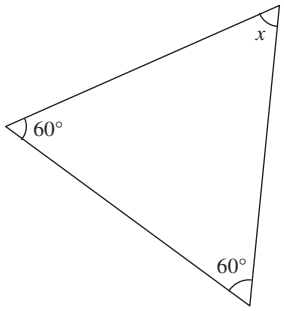
$x + 40° + 70° = 180°$
$x + 110° = 180°$
$x = 70°$
Isosceles triangle

(b)



$x + 58° + 32° = 180°$
$x + 90° = 180°$
$x = 90°$
Right-angled triangle

(c)



$x + 60° + 60° = 180°$
$x + 120° = 180°$
$x = 60°$
Equilateral triangle

8 (a) ✓ (b) ✗ (c) ✓ (d) ✓

9 (a) $x + 75° + 45° = 180°$
$x + 120° = 180°$
$x = 60°$

(b) $x + x + 28° = 180°$
$2x = 152°$
$x = 76°$

10 (a) $x = 47° + 34°$
$= 81°$

(b) $x + 21° = 132°$
$x = 111°$

11 $x = 60°$
$\angle SQT = y$
$y + y = 142°$
$2y = 142°$
$y = 71°$

12 $\angle PUQ = 43°$
$x + 43° = 180°$
$x = 137°$
$y + 21° + 90° + 43° = 180°$
$y + 154° = 180°$
$y = 26°$

13 A Wrong
B Correct
C Correct
D Correct
Answer: **A**

14 (a) Correct
(b) Correct
(c) Wrong
(d) Correct

15 (a) ✗ (b) ✓
(c) ✗ (d) ✓

16 $3x + 130° + x + 70° = 360°$
$4x = 160°$
$x = 40°$

17 $\angle MNH = 180° - 80°$
$= 100°$
$\angle LMN = 180° - 105°$
$= 75°$
$x + 115° + 75° + 100° = 360°$
$x + 290° = 360°$
$x = 70°$

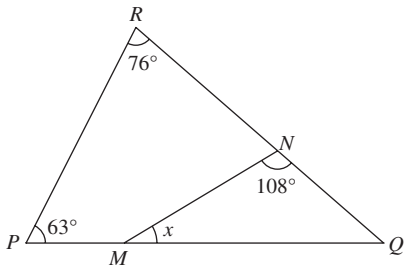
18 $x = 48°$
$y + 48° = 180°$
$y = 132°$

19 $x + 42° = 180°$
$x = 138°$
$y + 4y = 180°$
$5y = 180°$
$y = 36°$

20 $\angle ABC = \angle ACB$
$= \frac{1}{2} \times (180° - 38°)$
$= \frac{1}{2} \times 142°$
$= 71°$
$x + 27° = 71°$
$x = 44°$
$y + 38° + 44° + 114° + 86° = 360°$
$y + 282° = 360°$
$y = 78°$

Summative Practice

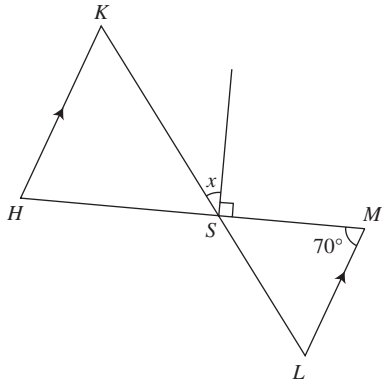
1



$\angle PQR = 180° - 63° - 76°$
$= 41°$
$x + 108° + 41° = 180°$
$x + 149° = 180°$
$x = 31°$

Answer: **B**

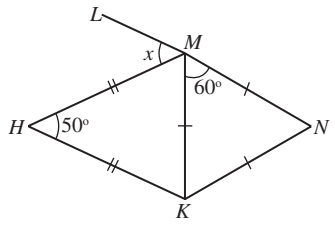
2



$\angle KHS = 70°$
$\angle HSK = \frac{1}{2} \times (180° - 70°)$
$= \frac{1}{2} \times 110°$
$= 55°$
$55° + x + 90° = 180°$
$x + 145° = 180°$
$x = 35°$

Answer: **C**

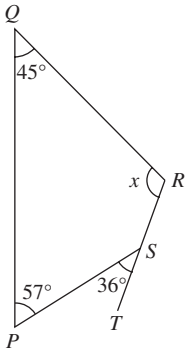
3



$\angle HMK = \frac{1}{2} \times (180° - 50°)$
$= \frac{1}{2} \times 130°$
$= 65°$
$x + 65° + 60° = 180°$
$x + 125° = 180°$
$x = 55°$

Answer: **A**

4



$\angle PSR = 180° - 36°$
$= 144°$
$x + 144° + 57° + 45° = 360°$
$x + 246° = 360°$
$x = 114°$

Answer: **A**

5 Number of axes of symmetry = 2

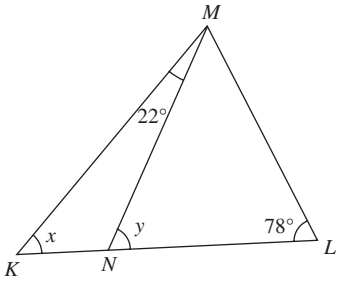
Answer: **A**

6 (a) Hexagon

(b) (i) Number of axes of symmetry
= 1

(ii) Number of diagonals
= 9

7



$\angle KML = 78°$

$x + 78° + 78° = 180°$

$x + 156° = 180°$

$x = 24°$

$\angle LMN = 78° - 22°$

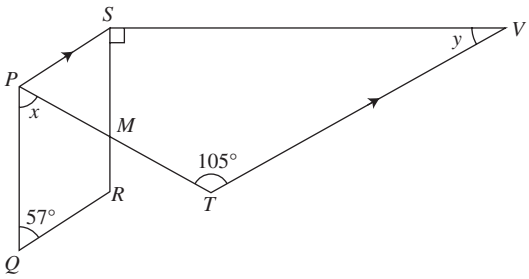
$= 56°$

$y + 78° + 56° = 180°$

$y + 134° = 180°$

$y = 46°$

8



$\angle SPT = 180° - 105°$

$= 75°$

$x + 75° + 57° = 180°$

$x + 132° = 180°$

$x = 48°$

$\angle PSR = 57°$

$y + 90° + 57° = 180°$

$y + 147° = 180°$

$y = 33°$

9 $x = \frac{1}{2} \times (180° - 46°)$

$= \frac{1}{2} \times 134°$

$= 67°$

$\angle BCD = 360° - 80° - 120° - 56° - 67°$

$= 37°$

$y + 37° + 46° + 67° = 180°$

$y + 150° = 180°$

$y = 30°$