Answers

Pages 60-61 — Circles

Q1

(1 mark for drawing an arrow pointing to anywhere on the outside edge of the circle.)

Q2 $d = 2 \times r$
$d = 2 \times 50$
$d = \mathbf{100\ cm}$ *(1 mark)*

Q3 $d = 2 \times r$
$d = 2 \times 6$
$d = \mathbf{12\ cm}$ *(1 mark)*

Q4 $d = 2 \times r$
$8 = 2 \times r$
$8 = 2 \times 4$
so $r = \mathbf{4\ cm}$ *(1 mark)*

Q5 $d = 2 \times r$
$70 = 2 \times r$
$70 = 2 \times 35$
so $r = \mathbf{35\ cm}$ *(1 mark)*

Q6 Radius of Janet's circle $= 3 \times 5\ cm = 15\ cm$.
$d = 2 \times r$, $d = 2 \times 15$
$d = 30$ so the diameter of Janet's circle = **30 cm**
(1 mark)

Q7 $d = 2 \times r$
$160 = 2 \times r$
$160 = 2 \times 80$
so $r = 80\ cm$
$40 + x + 10 = 80\ cm$
so $x = 80 - 40 - 10$
$x = \mathbf{30\ cm}$ *(1 mark)*

Pages 62-63 — Angles in Shapes

Q1 $B + 54 + 90 = 180$
$B = 180 - 90 - 54$
$B = \mathbf{36°}$ *(1 mark)*

Q2 $x + 247° + 42° + 51° = 360°$
$x + 340° = 360°$
$x = \mathbf{20°}$ *(1 mark)*

Q3 **The angles don't add up to 180°. The angles in a triangle always add up to 180°.** *(1 mark)*

Q4 $t + 102° + 90° + 90° = 360°$
$t + 282° = 360°$
$t = \mathbf{78°}$ *(1 mark)*

Q5 $e + f + 46 = 180$
so $e + f = 180 - 46 = 134$
It's an isosceles triangle so angles e and f are equal.
$134 \div 2 = 67$, so $\mathbf{e = 67°}$ *(1 mark)* and $\mathbf{f = 67°}$ *(1 mark)*

Q6 Sum of exterior angles = **360°** *(1 mark)*
Exterior angle = $\frac{360°}{8} = \frac{360°}{8} = \mathbf{45°}$ *(1 mark)*

Q7 Exterior angle of regular decagon = $\frac{360°}{10} = \mathbf{36°}$ *(1 mark)*
Interior angle = $180° - 36° = \mathbf{144°}$ *(1 mark)*

Pages 64-65 — Angle Rules

Q1 $T = \mathbf{33°}$ *(1 mark)*

Q2 $65° + 90° + W = 180°$
$155° + W = 180°$
so $W = \mathbf{25°}$ *(1 mark)*

Q3 $100° + 80° + 90° + 76° + G = 360°$
$346° + G = 360°$
so $G = \mathbf{14°}$ *(1 mark)*

Q4 A and C are equal as they are vertically opposite angles, so $C = \mathbf{99°}$ *(1 mark)*.
Angles on a straight line add up to 180°. A and B are on a straight line.
So $A + B = 180°$
$A + 99 = 180°$
$B = \mathbf{81°}$ *(1 mark)*
B and D are equal as they are vertically opposite angles, so $D = \mathbf{81°}$ *(1 mark)*.

Q5 $65° + X = 180°$
so $X = \mathbf{115°}$ *(1 mark)*
$40° + Y = 360°$
so $Y = \mathbf{320°}$ *(1 mark)*

Q6 It's an isosceles triangle so angle $S = 75°$.
$75° + 75° + T = 180°$
$150° + T = 180°$
$T = 30°$
T and Q are equal as they are vertically opposite angles, so $Q = \mathbf{30°}$ *(1 mark)*.
Angles on a straight line add up to 180°.
So $Q + R = 180°$
$R + 30 = 180°$
$R = \mathbf{150°}$ *(1 mark)*

Q7 $20° + 20° + Q = 180°$
$40° + Q = 180°$
so $Q = 140°$
$70° + 90° + 140° + P = 360°$
$300° + P = 360°$
$P = \mathbf{60°}$
(2 marks for correct answer, otherwise 1 mark for attempting to find angle Q.)

Pages 66-67 — Coordinates

Q1 $A = \mathbf{(-3, 4)}$
$B = \mathbf{(2, -2)}$
$C = \mathbf{(-4, -3)}$
(2 marks for all correct, otherwise 1 mark for 2 correct.)

Q2

(2 marks for all 6 correct, otherwise 1 mark for 4 or 5 correct.)

Q3 **(40, -10), (-10, 25)** *(1 mark)*