FORM 2
CHAPTER 7

Summative Practice

Section A

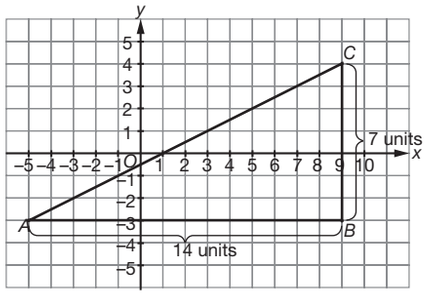
1 Equal distance from x-axis and y-axis
$= 8$ units: $(8, -8)$
Answer: **D**

2 Distance $= \sqrt{(3-(-3))^2 + (1-(-7))^2}$
$= \sqrt{36+64}$
$= \sqrt{100}$
$= 10$ units
Answer: **D**

3 P = Midpoint of $RS = \left(\frac{-4+2}{2}, \frac{3+(-5)}{2}\right)$
$= (-1, -1)$
Answer: **B**

4 $Q = (-5, -2-7) = (-5, -9)$
Answer: **B**

5 Distance of $PQ = 9-(-5)$
$= 14$ units
Distance of $QR = 4-(-3)$
$= 7$ units
Area $= \frac{1}{2}(7)(14) = 49$ unit^2



Answer: **C**

6 x-coordinate of points P and $Q = 6-11$
$= -5$
Area of $PQR = 55$ units^2
$\frac{1}{2}(11)(PQ) = 55$
$PQ = 10$ units
y-coordinate of point $P = 10-3$
$= 7$
Coordinates of $P = (-5, 7)$
Answer: **D**

7 Q = midpoint of PR
$\left(\frac{5+3}{2}, \frac{-1+(-3)}{2}\right) = (4, -2) \rightarrow k = -2$
Answer: **B**

8 By using the Pythagoras theorem, the distance from the origin:
$(0, 11) = 11$ units
$(-3, 4) = 5$ units
$(6, -8) = 10$ units
$(-12, -5) = 13$ units (the furthest))
Answer: **D**

9 $\sqrt{(7-4)^2 + (6-p)^2} = 5$
$9 + (6-p)^2 = 25$
$(6-p)^2 = 16$
$6-p = \sqrt{16}$
$6-p = \pm 4$
$p = 6-4 = 2$ or $p = 6-(-4) = 10$ (I, III)
Answer: **C**

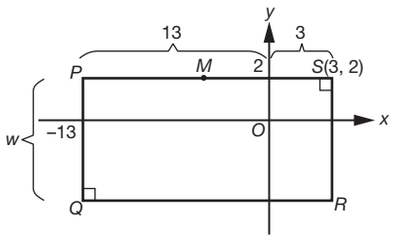
10 $T = (-5, 6)$, V = midpoint of $TW = (-1, 2)$, $W = (x, y)$
$\left(\frac{-5+x}{2}, \frac{6+y}{2}\right) = (-1, 2)$
$\frac{-5+x}{2} = -1$ $\qquad$ $\frac{6+y}{2} = 2$
$-5+x = -2$ $\qquad$ $6+y = 4$
$x = 3$ $\qquad$ $y = -2$
$\therefore W = (3, -2)$
Answer: **A**

Section B

1 (a) (i) $EF = 11$ units below the x-axis $\rightarrow y = -11$
Coordinates of $E = (-9, -11)$
(ii) $EF = 15$ units $\rightarrow$ x-coordinate of F
$= 15-9$
$= 6$
Coordinates of $F = (6, -11)$

(b) Midpoint of $EF = \left(\frac{-9+6}{2}, \frac{-11+(-11)}{2}\right)$
$= \left(\frac{-3}{2}, -11\right)$
Midpoint of EF lies at the third quadrant.

2 (a) $M = (-5, 2)$, $P = (-13, 2)$, $S = (x, 2)$
$\left(\frac{-13+x}{2}, \frac{2+2}{2}\right) = (-5, 2)$
$-13+x = -10$
$x = 3$
Thus, $S = (3, 2)$
Area of rectangle $= 96$
$16 \times w = 96$
$w = 6$ units



(i) Coordinates of $Q = (-13, -4)$
(ii) Coordinates of $S = (3, 2)$
(b) (i) Distance of $PQ = 4+2$
$= 6$ units
(ii) Perimeter $= 16+16+6+6$
$= 44$ units

Section C

1 (a) (i) T = Midpoint of JL

$T = \left(\frac{-2+4}{2}, \frac{5+(-1)}{2}\right) = (1, 2)$

(ii) Distance of $JK = LM$

$= \sqrt{(-6-(-2))^2 + (-1-5)^2}$

$= \sqrt{(-4)^2 + (-6)^2}$

$= \sqrt{52}$

$= 7.21$

Distance of $KL = JM$

$= \sqrt{(-6-4)^2 + (-1-(-1))^2}$

$= \sqrt{(-10)^2 + (0)^2}$

$= 10$

Perimeter $= 10(2) + 7.21(2)$

$= 34.42$ units

(b) $\sqrt{(-3-p)^2 + (9-9)^2} = 4$

$(-3-p)^2 = 16$

$-3-p = \pm 4$

$p = -3-4 = -7$ or $p = -3-(-4) = 1$

(c) $AB = \sqrt{(-1-11)^2 + (3-1)^2}$

$= \sqrt{(-12)^2 + 2^2} = \sqrt{148}$

$AC = \sqrt{(-1-6)^2 + (3-8)^2}$

$= \sqrt{(-7)^2 + (-5)^2} = \sqrt{74}$

$BC = \sqrt{(11-6)^2 + (1-8)^2}$

$= \sqrt{5^2 + (-7)^2} = \sqrt{74}$

$AC = BC \neq AB$, Therefore, ABC is an isosceles triangle.