

Name _____

Date _____

Analytic Geometry: your summary

1 Fill in every blank from memory. No notes.

2 Check it against the Unit Summary in a different colour.

3 Tick ✓ or X on each card. Every X is a topic to review.

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Worksheet, answers &
this cheat sheet



Which tool?

Write the tool for each case.

Is $\angle B = 90^\circ$? Is $AB = BC$? Centre of PQ **1** Midpoint and length ☒ ☐

1 Write the midpoint and length formulas.

2 Midpoint and length of $P(-6, -1)$, $Q(2, 5)$.

3 $M(1, -4)$ is the midpoint of ST , and S is $(-3, 2)$. Find T .

2 Circle at the origin ☒ ☐

4 Circle centred at the origin through $(-9, 12)$: its equation? Is $(11, 11)$ inside, on or outside?

5 Radius and x -intercepts of $x^2 + y^2 = 48$.

3 Slopes and triangles ☒ ☐

6 Classify $\triangle PQR$ with $P(-3, -1)$, $Q(1, 1)$, $R(-1, 5)$ by sides and angles.

4 Quadrilaterals ☒ ☐

7 Show $A(0, 0)$, $B(5, 0)$, $C(8, 4)$, $D(3, 4)$ is a rhombus but not a square.

5 Lines in a triangle ☒ ☐

8 Which special line passes through a midpoint? Which is perpendicular to a side? Which does both?

9 $A(0, 0)$, $B(10, 0)$, $C(4, 8)$: equation of the median from C .

6 Proving properties ☒ ☐

10 $O(0, 0)$, $A(14, 0)$, $B(6, 10)$: M , N are midpoints of OB and AB . Show $MN \parallel OA$ and $MN = \frac{1}{2}OA$.

7 Distance to a line ☒ ☐

11 Find the distance from $P(5, 7)$ to $y = -x + 2$.

My traps Your three most likely mistakes, and how you will catch each one.

1 _____ **2** _____ **3** _____

1 $M = ((x_1 + x_2)/2, (y_1 + y_2)/2)$; $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
2 $(-2, 2)$; 10
3 $T(5, -10)$
4 $x^2 + y^2 = 225$; 242 > 225: outside
5 $r = 4\sqrt{3}$; $(\pm 4\sqrt{3}, 0)$
6 $PQ = QR = 2\sqrt{5}$, $m_{PQ}m_{QR} = -1$: isosceles right, right angle at Q
7 All sides 5; $m_{AB} = 0$, $m_{BC} = 4/3$: not perpendicular
8 median, altitude; perpendicular bisector
9 Through $(5, 0)$, slope -8 : $y = -8x + 40$
10 $M(3, 5)$, $N(10, 5)$: slope 0, $MN = 7$, $OA = 14$
11 Perpendicular $y = x + 2$ meets it at $(0, 2)$: $5\sqrt{2} \approx 7.1$

Answers to the numbered prompts. Cover this strip until you are done.