

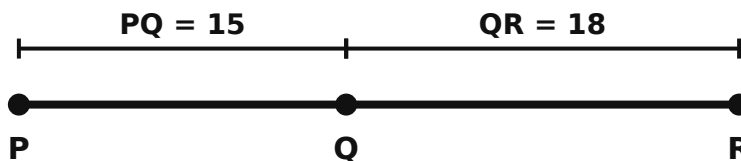
Geometry - Points, Lines, Segments and Angles - Test Answer Key

Common Core G-CO.A.1 · maths-pdf.fr/en/

Use this answer key and scoring guide for the segments and angles test. Each solution shows the full work, and the scoring note tells how the points are split between method and final answer. Partial credit is listed so that grading stays consistent from one paper to the next.

Geometry · Common Core State Standards: **G-CO.A.1**

Question 1 - Segment addition [2 pts]



PQ = 15 and QR = 18.

$$(3x-3)+(2x+6)=33$$

$$5x+3=33$$

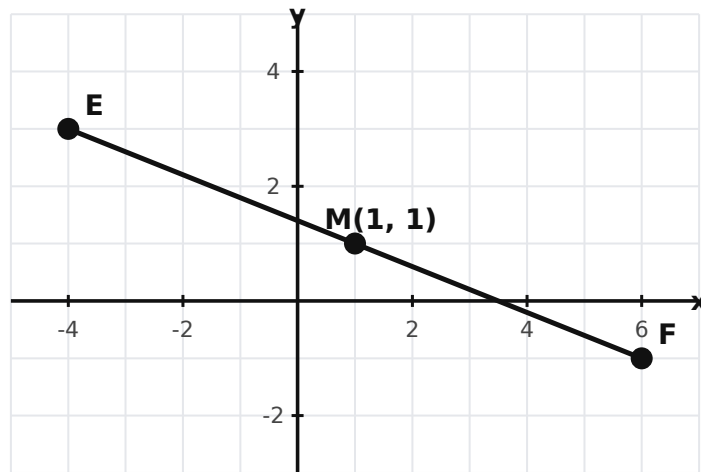
$$x=6$$

$$PQ=3(6)-3=15$$

$$x = 6, PQ = 15$$

Scoring: 1 point for the equation, 1 point for correct x and PQ .

Question 2 - Midpoint and length [3 pts]



Midpoint $M(1, 1)$.

a. $\left(\frac{-4+6}{2}, \frac{3+(-1)}{2}\right) = (1, 1)$

b. $EF = \sqrt{(6-(-4))^2 + (-1-3)^2} = \sqrt{100+16} = \sqrt{116} = 2\sqrt{29}$

(a) (1, 1); (b) $2\sqrt{29}$ units

Scoring: (a) 1 point. (b) 1 point for the distance setup, 1 point for the simplified radical.

Question 3 - Angle bisector [2 pts]

$$2x+7=5x-20$$

$$27=3x$$

$$x=9$$

$$2(9)+7=25, \text{ so } m\angle ABC = 50^\circ$$

$x = 9$, $m\angle ABC = 50^\circ$

Scoring: 1 point for equating the halves, 1 point for x and the angle measure.

Question 4 - Complement and linear pair [2 pts]

a. $x+12+2x-6=90$, $3x=84$, $x=28$

b. $\alpha+4\alpha=180$, $\alpha=36$, so the angles are 36° and 144°

(a) $x = 28$; (b) 36° and 144°

Scoring: 1 point each part for a correct equation and answer.

Question 5 - Definitions [3 pts]

- a. A circle is the set of all points in a plane at a given distance from a fixed point (the center).
- b. Perpendicular lines are two lines that intersect to form right (90°) angles.
- c. A segment has two endpoints and a finite length; a ray has one endpoint and extends forever in one direction.

Scoring: 1 point per definition. Accept equivalent wording, but the circle definition must mention a fixed center and a constant distance.

Question 6 - Find an endpoint [2 pts]

$$\frac{13+x}{2} = 7 \text{ gives } x = 1.$$

$$\frac{4+y}{2} = -2 \text{ gives } y = -8.$$

B(1, -8)

Scoring: 1 point for each coordinate.

Question 7 - Clock angle [2 pts]

At 5:00 the hands are 5 hours apart: $5 \cdot 30^\circ = 150^\circ$.

At 10:30 the minute hand is at 180° and the hour hand is at $10.5 \cdot 30^\circ = 315^\circ$, a difference of 135° .

150° and 135°

Scoring: 1 point for each time.

Question 8 - Equal distances [2 pts]

$$\text{Distance from the center: } \sqrt{(5-2)^2 + (3+1)^2} = \sqrt{9+16} = 5.$$

The distance equals the radius, so the point is **on the circle**.

Scoring: 1 point for the distance, 1 point for the conclusion.

Question 9 - Pipeline markers [2 pts]
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$$\frac{4.5+29.5}{2}=17.$$

$29.5-4.5=25$, so each distance is 12.5 miles.

Mile 17, 12.5 miles from each marker

Scoring: 1 point for the midpoint, 1 point for the distance.

Total
20 points