Locus problems and siting problems worksheet – Grade 10

Grade 10 · Mixed level · 20 questions · **Version X9593**

Name: _____ Date: _____ Score: ___ / 20

Scan to check answers + earn stars

Done the worksheet? Scan the code (or enter version X9593 on this skill's page at themathmeridian.com) to check your answers online and earn stars.

1. What is the locus of points equally far from two parallel lines?
   A. One point **B.** A perpendicular line **C.** A parallel line halfway between them **D.** A circle

2. What is the locus of points exactly 17 m from a point P?
   A. A circle of radius 17 m around P **B.** A line through P **C.** A square around P **D.** A single point

3. What is the locus of points 14 m from a straight fence, on either side?
   A. A square **B.** Two lines parallel to the fence **C.** A circle **D.** One line

4. Work out the locus of points exactly 7 m from a point P.
   A. A square around P **B.** A line through P **C.** A single point **D.** A circle of radius 7 m around P

5. A wifi router reaches 18 m in all directions. What shape is the area it covers?
   A. A triangle **B.** A disc (filled circle) **C.** A square **D.** A straight line

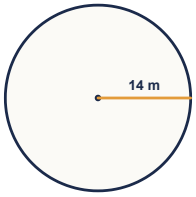
6. Find the locus of points equally far from two points A and B.
   A. A circle around A **B.** The midpoint only **C.** The perpendicular bisector of AB **D.** The segment AB

7. A speaker reaches 4 m in all directions. What shape is the area it covers?
   A. A disc (filled circle) **B.** A triangle **C.** A straight line **D.** A square

The Math Meridian

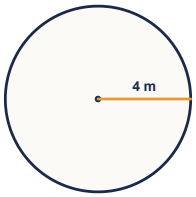
© The Math Meridian · themathmeridian.com · Free for personal and classroom use

8. A wifi router covers a circle of radius 14 m. Using $\pi \approx 3.14$, what area does it cover, in m^2? Give your answer to two decimal places.



Answer: _____ m^2

9. A speaker covers a circle of radius 4 m. Using $\pi \approx 3.14$, what area does it cover, in m^2? Give your answer to two decimal places.



Answer: _____ m^2

10. A hospital must be the same distance from the three towns. Which point should be used?

A. The orthocentre **B.** The centroid **C.** The circumcentre **D.** The incentre

11. A motion light covers a circle of radius 8 m. Using $\pi \approx 3.14$, what area does it cover, in m^2? Give your answer to two decimal places.



Answer: _____ m^2

12. Two points are 11 m apart. How many points are 11 m from both?

Answer: _____

13. Which point lies at the crossing of "equally far from A and B" and "equally far from B and C"?

A. The circumcentre of $\triangle ABC$ **B.** None **C.** The incentre of $\triangle ABC$

D. The centroid of $\triangle ABC$

The Math Meridian

14. Two parallel fences are 22 m apart. A path runs equally far from both. How far is the path from each fence, in m?

    Answer: _____ m

15. Points are equally far from A(0, 0) and B(6, 0). What is the x-value of every such point?

    Answer: _____

16. Work out the locus of points equally far from the lines $y = x$ and $y = -x$.

    A. The line $y = 2x$ **B.** Only the x-axis **C.** A circle at the origin

    D. The x-axis and the y-axis

17. Three straight roads form a right triangle with sides 10, 24 and 26 km. A depot must be the same distance from all three. How far is it from each road, in km?

    Answer: _____ km

18. A dog is tied with an 8 m rope to the outside corner of a very large square barn. Using $\pi \approx 3.14$, what area can it reach, in m^2? Give your answer to two decimal places.

    Answer: _____ m^2

19. A rectangle is 18 m by 8 m. How far from each corner is the point that is equally far from all four, to one decimal place?

    Answer: _____ m

20. A dog is tied with a 7 m rope to the outside corner of a very large square barn. Using $\pi \approx 3.14$, what area can it reach, in m^2? Give your answer to two decimal places.

    Answer: _____ m^2

The Math Meridian

Answer key · Version X9593

Locus problems and siting problems worksheet – Grade 10 · Grade 10 · to reprint this sheet or check the answers, enter X9593 on the skill page.

1. **C (A parallel line halfway between them)**
2. **A (A circle of radius 17 m around P)**
3. **B (Two lines parallel to the fence)**
4. **D (A circle of radius 7 m around P)**
5. **B (A disc (filled circle))**
6. **C (The perpendicular bisector of AB)**
7. **A (A disc (filled circle))**
8. **615.44**
9. **50.24**
10. **C (The circumcentre)**
11. **200.96**
12. **2**
13. **A (The circumcentre of △ABC)**
14. **11**
15. **3**
16. **D (The x-axis and the y-axis)**
17. **4**
18. **150.72**
19. **9.8**
20. **115.4**

The Math Meridian