

# Points, Lines, Rays, and Angles

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

Geometry starts with a few simple building blocks. A **point** is just an exact spot — it has no size at all. A **line** is perfectly straight and goes on forever in *both* directions. A **ray** starts at one endpoint and goes on forever in only *one* direction, like a beam from a flashlight. A **line segment** is a straight path with *two* endpoints, so it has a definite length. When two rays share the same endpoint, they form an **angle**. A **right angle** measures exactly  $90^\circ$  and makes a square corner. An **acute angle** is smaller than  $90^\circ$ , and an **obtuse angle** is larger than  $90^\circ$  but less than  $180^\circ$ .

◇ **Example:** A figure is perfectly straight, has two endpoints, and has a definite length you could measure with a ruler. What is it?

⇒ Let's check the clues one at a time. It is straight, so it is one of our geometry pieces. The big clue is *two endpoints* — a line has no endpoints and a ray has only one, but a line segment has exactly two. Having two endpoints is also why it has a length you can measure. So this figure must be a line segment.

**Answer:** line segment

## PRACTICE

Name the geometric term or classify the angle described in each problem.

1. An exact spot with no size \_\_\_\_\_
2. A straight path that goes on forever in both directions \_\_\_\_\_
3. A straight path with two endpoints \_\_\_\_\_
4. A straight path with one endpoint that goes on forever one way \_\_\_\_\_
5. Two rays that share the same endpoint \_\_\_\_\_
6. An angle that measures exactly  $90^\circ$  \_\_\_\_\_
7. An angle that measures  $45^\circ$  \_\_\_\_\_
8. An angle that measures  $130^\circ$  \_\_\_\_\_
9. An angle that measures  $20^\circ$  \_\_\_\_\_
10. An angle that measures  $95^\circ$  \_\_\_\_\_
11. The corner of a sheet of paper is which kind of angle? \_\_\_\_\_
12. An angle that measures  $89^\circ$  \_\_\_\_\_
13. An angle that measures  $90^\circ$  \_\_\_\_\_
14. An angle that measures  $179^\circ$  \_\_\_\_\_
15. A beam of light from a flashlight is most like a ... \_\_\_\_\_
16. An angle that measures  $1^\circ$  \_\_\_\_\_
17. An L-shaped corner forms an angle that is which kind? \_\_\_\_\_
18. An angle that measures  $150^\circ$  \_\_\_\_\_
19. The shape of a ruler's edge with two marked ends \_\_\_\_\_
20. An angle that measures  $60^\circ$  \_\_\_\_\_

### ◆ Word Problems

21. Maria is looking at the hands of a clock at 3:00. The two hands meet at the center and form an angle of  $90^\circ$ . What kind of angle do the clock hands make? \_\_\_\_\_
22. Jayden draws a straight path on his paper and puts a clear dot at each end so everyone knows where it stops. What geometric figure did Jayden draw? \_\_\_\_\_
23. During art class, Priya tilts her ramp so the angle between the ramp and the floor opens to  $35^\circ$ . Is that angle acute, right, or obtuse? \_\_\_\_\_
24. A lighthouse sends a beam of light that starts at the lamp and travels straight out across the ocean as far as it can go. Which geometric figure best matches that beam of light? \_\_\_\_\_



## Answer Keys

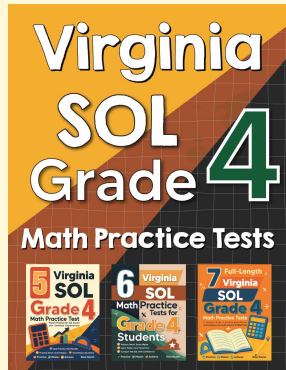
- |                  |                    |
|------------------|--------------------|
| 1. point         | 13. right angle    |
| 2. line          | 14. obtuse angle   |
| 3. line segment  | 15. ray            |
| 4. ray           | 16. acute angle    |
| 5. angle         | 17. right angle    |
| 6. right angle   | 18. obtuse angle   |
| 7. acute angle   | 19. line segment   |
| 8. obtuse angle  | 20. acute angle    |
| 9. acute angle   | 21. a right angle  |
| 10. obtuse angle | 22. a line segment |
| 11. right angle  | 23. acute          |
| 12. acute angle  | 24. a ray          |

### Step-by-Step Explanations

- |   |   |
|---|---|
| <p>1. A point just marks one exact location — it has no length or width at all.</p> <p>2. A line never ends — it keeps going forever in both directions.</p> <p>3. Two endpoints means it is a line segment, so it has a length you can measure.</p> <p>4. One endpoint and one forever-direction — that is a ray, like a flashlight beam.</p> <p>5. When two rays meet at a shared endpoint, they form an angle.</p> <p>6. Exactly <math>90^\circ</math> makes a perfect square corner, so it is a right angle.</p> <p>7. Since <math>45^\circ</math> is less than <math>90^\circ</math>, this is an acute angle.</p> <p>8. Since <math>130^\circ</math> is between <math>90^\circ</math> and <math>180^\circ</math>, it is an obtuse angle.</p> <p>9. <math>20^\circ</math> is much smaller than <math>90^\circ</math>, so the angle is acute.</p> <p>10. <math>95^\circ</math> is just past <math>90^\circ</math>, so it counts as an obtuse angle.</p> <p>11. A paper corner is a perfect square corner, which is a right angle of <math>90^\circ</math>.</p> <p>12. <math>89^\circ</math> is just under <math>90^\circ</math>, so the angle is acute.</p> <p>13. Any angle measuring exactly <math>90^\circ</math> is a right angle.</p> <p>14. <math>179^\circ</math> is less than <math>180^\circ</math> but more than <math>90^\circ</math>, so it is obtuse.</p> | <p>15. It starts at the flashlight and shines on forever one way — that is a ray.</p> <p>16. <math>1^\circ</math> is a tiny angle, far below <math>90^\circ</math>, so it is acute.</p> <p>17. An L-shape makes a square corner of <math>90^\circ</math>, which is a right angle.</p> <p>18. <math>150^\circ</math> falls between <math>90^\circ</math> and <math>180^\circ</math>, so it is obtuse.</p> <p>19. Two marked ends means two endpoints, so the edge is a line segment.</p> <p>20. <math>60^\circ</math> is less than <math>90^\circ</math>, so the angle is acute.</p> <p>21. An angle of exactly <math>90^\circ</math> is a right angle. At 3:00 the hands make a perfect square corner.</p> <p>22. A straight path with two endpoints is a line segment. The two dots are the endpoints.</p> <p>23. Since <math>35^\circ</math> is less than <math>90^\circ</math>, the angle is acute — it is a small, narrow opening.</p> <p>24. The beam has one starting endpoint at the lamp and goes on forever in a single direction, which is exactly what a ray is.</p> |
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