

Name: _____

Grade: _____

Score: _____

Worksheet #5



UNDERSTANDING LINES - APPLICATIONS

Learning goal: Students will understand the concept of a straight line by solving real-life problems involving equal intervals, total distance, and spacing.

Riya and her brother Aarav are laying down string lights for Diwali along a straight path from their house to the garden gate. The total length of the path is 18 meters. They want to place poles at equal intervals along the straight line to support the lights.

1. If they place a pole every 3 meters, how many poles will they need between the house and the gate (excluding the ends)?

2. How many total poles will there be including the start and end?

3. If each pole costs ₹45, what is the total cost of all poles?

4. If Riya suggests placing a pole every 2 meters instead, how many poles would they need in total (including ends)?

5. Aarav notices that placing poles every 2 meters uses 4 more poles than placing them every 3 meters. Is he correct?

6. If the path were extended by 6 meters, how many total poles would be needed with 3-meter spacing (including ends)?

7. What is the minimum number of poles needed to ensure no part of the 18-meter path is unsupported by more than 6 meters?

8. They decide to decorate each pole with 5 LED bulbs. How many bulbs will they need if they use the 3-meter spacing?

9. If one roll of string light covers 6 meters, how many rolls are needed to cover the full 18-meter line?

10. Is it correct to say the poles lie on a line even though they are spaced out? Why or why not?

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Worksheet #5(Answers)

**UNDERSTANDING LINES - APPLICATIONS**

Learning goal: Students will understand the concept of a straight line by solving real-life problems involving equal intervals, total distance, and spacing.

Riya and her brother Aarav are laying down string lights for Diwali along a straight path from their house to the garden gate. The total length of the path is 18 meters. They want to place poles at equal intervals along the straight line to support the lights.

1. If they place a pole every 3 meters, how many poles will they need between the house and the gate (excluding the ends)? $\frac{18}{3} = 6 = 6-1 = 5$ Poles

2. How many total poles will there be including the start and end? $\frac{18}{3} = 6 = 6+1 = 7$ Poles

3. If each pole costs ₹45, what is the total cost of all poles?
7 Poles x ₹ 45 = ₹315

4. If Riya suggests placing a pole every 2 meters instead, how many poles would they need in total (including ends)? $\frac{18}{2} = 9 = 9 + 1 = 10$ Poles

5. Aarav notices that placing poles every 2 meters uses 4 more poles than placing them every 3 meters. Is he correct? **Yes. $10 - 6 = 4$. Aarav is correct.**

6. If the path were extended by 6 meters, how many total poles would be needed with 3-meter spacing (including ends)? **New length = 24m $\rightarrow \frac{24}{3} = 8 = 8 + 1 = 9$ Poles**

7. What is the minimum number of poles needed to ensure no part of the 18-meter path is unsupported by more than 6 meters? $\frac{18}{6} = 3$ **So, minimum number of poles needed is $3+1 = 4$ poles**

8. They decide to decorate each pole with 5 LED bulbs. How many bulbs will they need if they use the 3-meter spacing? **7 polls \rightarrow so 7×5 bulbs = 35 bulbs**

9. If one roll of string light covers 6 meters, how many rolls are needed to cover the full 18-meter line? $\frac{18}{6} = 3$ **3 rolls**

10. Is it correct to say the poles lie on a line even though they are spaced out? Why or why not? **Yes. A straight arrangement of evenly spaced poles represents points on a line, even with gaps.**