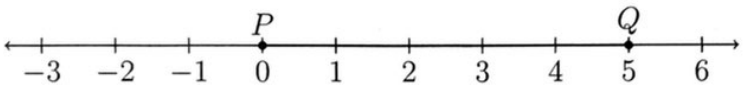
Name: SOLUTIONS

1.2 Homework: Number line and algebra practice

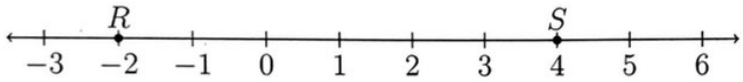
1. Given $\overline{PQ}$ as shown on the number line.



What is the length of the segment $\overline{PQ}$?

$PQ =$ $5 - 0 = 5$

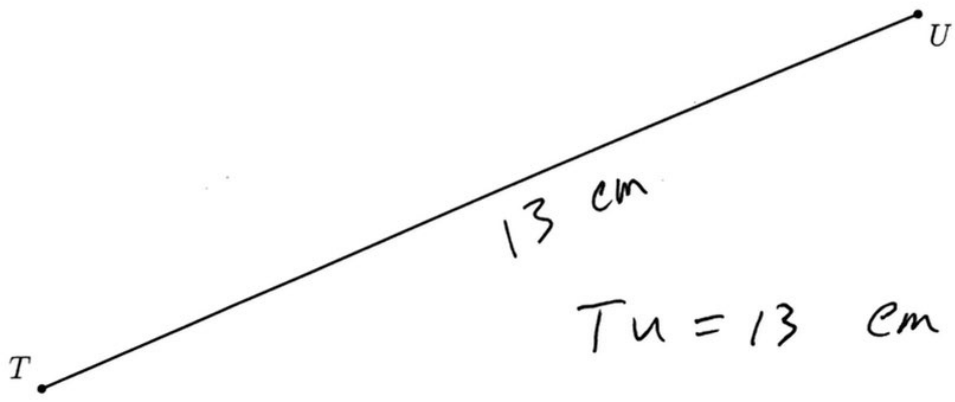
2. Two points $R(-2)$, $S(4)$ are shown on the number line.



What is the distance between R and S? Show your work as an equation.

$RS = 4 - (-2) = 6$

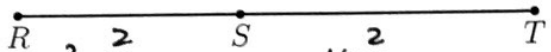
3. Measure the segment $\overline{TU}$. Write its length in centimeters (expressed as an equation).



$TU = 13$ cm

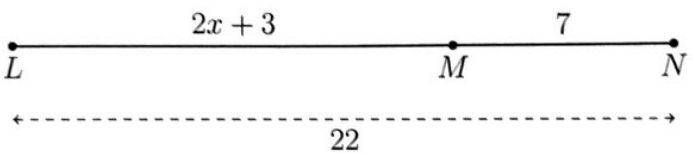
4. Points that fall on the same straight line are collinear.

5. Given $\overline{RST}$, $RS = 3\frac{2}{3}$, and $ST = 4\frac{2}{3}$. Find RT (expressed as a fraction, not a decimal).



$RT = 3\frac{2}{3} + 4\frac{2}{3} = 8\frac{1}{3}$

6. As shown, three collinear points with $LM = 2x + 3$, $MN = 7$, $LN = 22$. Find x.



(a) Write down an equation to represent the situation. $(2x+3) + 7 = 22$

(b) Solve for x.

$2x + 10 = 22$

$2x = 12$

$x = 6$

(c) Check your answer.

$LM = 2(6) + 3 = 15$

$15 + 7 = 22$ ✓

7. Two textbooks are stacked up. One is a heavy calculus book, two inches thick. The other is one inch thick, *Topics in Topography*. How tall is the stack of both books?

$h = 2 + 1 = 3$ inches

8. Dr. Huson is 5 foot 7 inches tall. If he stepped up onto a 6 inch box how tall would he be then?

$h = 5'7'' + 6''$

$= 6'1''$