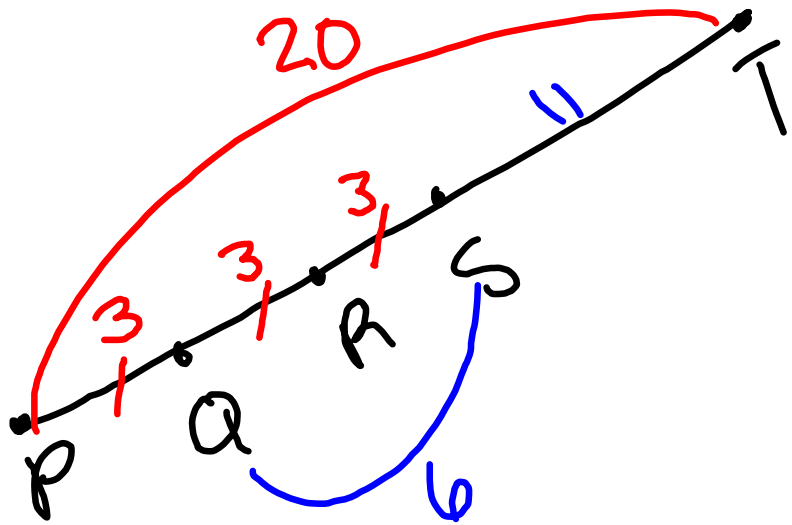
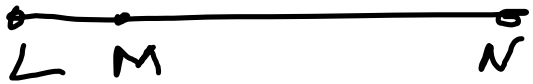
21 $NM + MP = NP$

24



33



$$LM + MN = LN$$

$$\frac{1}{2}z + 2 + 3z + \frac{3}{2} = 5z + 2$$

$$3\frac{1}{2}z + 3\frac{1}{2} = 5z + 2$$

$$-5z \qquad\qquad -5z$$

$$-1\frac{1}{2}z + 3\frac{1}{2} = 2$$

$$-3\frac{1}{2} \qquad -3\frac{1}{2}$$

$$-1\frac{1}{2}z = -1\frac{1}{2}$$

$$z = 1$$

36

$GH = \sqrt{50} = \sqrt{25}\sqrt{2} = 5\sqrt{2}$

$GJ = \sqrt{61}$

$HJ = \sqrt{37}$

39

$LN = \sqrt{117} \quad \sqrt{9}\sqrt{13} = 3\sqrt{13}$

$MN = \sqrt{109}$

$PN = \sqrt{90} = \sqrt{9}\sqrt{10} = 3\sqrt{10}$

(42) P (5, 1)

Q (-5, -7)

R (-3, 6)

$$PQ = \sqrt{(5-(-5))^2 + (1-(-7))^2}$$

$$\sqrt{100 + 64}$$

$$\sqrt{164}$$

$$\sqrt{4}\sqrt{41} = 2\sqrt{41}$$

$$QR = \sqrt{(-5-(-3))^2 + (-7-6)^2}$$

$$\sqrt{4 + 169} = \sqrt{173}$$

48

B (5075, 2326)

D (8436, 4034)

$$BD = \sqrt{(8436-5075)^2 + (4034-2326)^2}$$

54

$$AB = \sqrt{15^2 + 30^2}$$

$$\sqrt{225 + 900}$$

$$\sqrt{1125}$$

$$\sqrt{225}\sqrt{5} = 5\sqrt{5}$$

$$\approx 33.5 \text{ yds}$$

54

$$BC = \sqrt{(15-{}^{-}50)^2 + (30-15)^2}$$

$$\sqrt{65^2 + 15^2}$$

$$\sqrt{4450} \approx 66.7 \text{ yds}$$

$$5\sqrt{178}$$

54

$$AC = \sqrt{(-50)^2 + (15)^2}$$

$$\sqrt{2500 + 225}$$

$$\sqrt{2725}$$

$$5\sqrt{109} \approx 52.2$$