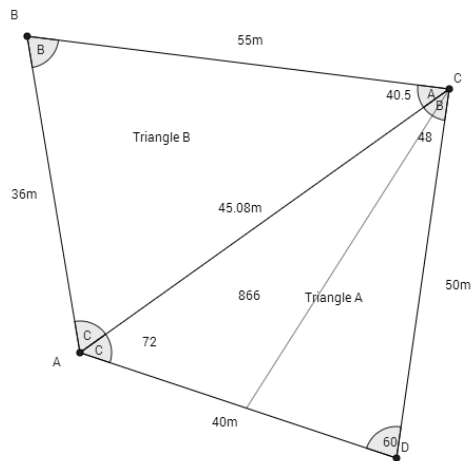


Student 4: High Achieved
 NZQA Intended for teacher use only



4

$$AC^2 = 40^2 + 50^2 - 2 \times 40 \times 50 \times \cos 60$$

$$AC^2 = 2100$$

$$AC = 45.8m$$

Length of pipeline = 45.8m

1

$$\text{area ACD} = \frac{1}{2} \times 40 \times 50 \times \sin 60 = 866m^2$$

$$\angle CAD = \frac{\sin C}{50} = \frac{\sin 60}{45.8}$$

$$\sin C = 0.95$$

$$C = 72^\circ$$

3

2

$$\Delta B = \cos A = \frac{45.8^2 + 55^2 - 36^2}{2 \times 45.8 \times 55}$$

$$A = 40.5^\circ$$

$$\text{area BCA} = \frac{1}{2} \times 45.8 \times 55 \times \sin 40.5$$

$$= 818m^2$$

3