

1) A. Translasi $(-4, 2)$

• Titik A $(3, 1)$

$$\begin{aligned} A'(x, y) &= A + Tr \\ &= (3, 1) + (-4, 2) \\ &= (-1, 3) \end{aligned}$$

• Titik C $(7, 4)$

$$\begin{aligned} C'(x, y) &= C + Tr \\ &= (7, 4) + (-4, 2) \\ &= (3, 6) \end{aligned}$$

• Titik B $(6, 2)$

$$\begin{aligned} B'(x, y) &= B + Tr \\ &= (6, 2) + (-4, 2) \\ &= (2, 4) \end{aligned}$$

• Titik D $(2, 5)$

$$\begin{aligned} D'(x, y) &= D + Tr \\ &= (2, 5) + (-4, 2) \\ &= (-2, 7) \end{aligned}$$

B. Rotasi 65°

• Titik A $(3, 1)$

$$\begin{aligned} A' &= (3 \cdot \cos 65 - 1 \cdot \sin 65, 1 \cdot \cos 65 + 3 \cdot \sin 65) \\ &= (3 \cdot 0,423 - 1 \cdot 0,906, 1 \cdot 0,423 + 3 \cdot 0,906) \\ &= (1,269 - 0,906, 0,423 + 2,718) \\ &= (0,363, 3,141) \end{aligned}$$

• Titik B $(6, 2)$

$$\begin{aligned} B' &= (6 \cdot \cos 65 - 2 \cdot \sin 65, 2 \cdot \cos 65 + 6 \cdot \sin 65) \\ &= (2,538 - 1,812, 0,846 + 5,436) \\ &= (0,726, 6,282) \end{aligned}$$

• Titik C $(7, 4)$

$$\begin{aligned} C' &= (7 \cdot \cos 65 - 4 \cdot \sin 65, 4 \cdot \cos 65 + 7 \cdot \sin 65) \\ &= (2,961 - 3,624, 1,692 + 6,342) \\ &= (-0,663, 8,034) \end{aligned}$$

• Titik D $(2, 5)$

$$\begin{aligned} D' &= (2 \cdot \cos 65 - 5 \cdot \sin 65, 5 \cdot \cos 65 + 2 \cdot \sin 65) \\ &= (0,846 - 4,53, 2,115 + 1,812) \\ &= (-3,684, 3,927) \end{aligned}$$

C. Skala (2,3) pada titik pusat (6,2)

• Penggeseran sebesar (-6, -2)

$$-A' = (3-6, 1-2) = (-3, -1)$$

$$-B' = (6-6, 2-2) = (0, 0)$$

$$-C' = (7-6, 4-2) = (1, 2)$$

$$-D' = (2-6, 5-2) = (-4, 3)$$

• Penskalaan

$$A'' = (-3 \cdot 2, -1 \cdot 3) = (-6, -3)$$

$$B'' = (0 \cdot 2, 0 \cdot 3) = (0, 0)$$

$$C'' = (1 \cdot 2, 2 \cdot 3) = (2, 6)$$

$$D'' = (-4 \cdot 2, 3 \cdot 3) = (-8, 9)$$

• Penggeseran sebesar (6, 2)

$$A''' = (-6+6, -3+2) = (0, -1)$$

$$B''' = (0+6, 0+2) = (6, 2)$$

$$C''' = (2+6, 6+2) = (8, 8)$$

$$D''' = (-8+6, 9+2) = (-2, 11)$$