page 4

4b) eq of (EK): $y = -4$ since E and K have same ordinate
$\triangle EHK$ is right at E since (EH) // y-axis and (EK) // x-axis
and $(y'oy) \perp (x'ox)$ orthonormal system $(\frac{3}{4}, \frac{3}{4})$.

5) $S \overset{?}{=} t_{\overrightarrow{KH}}^{E}$ so $\overrightarrow{ES} \overset{?}{=} \overrightarrow{KH}$ then $x_{\overrightarrow{ES}} \overset{?}{=} x_{\overrightarrow{KH}}$

$x_S - x_E \overset{?}{=} x_H - x_K$ so $-4+1 \overset{?}{=} -1-2$

$-3 = -3$ ✓ similarly $y_{\overrightarrow{ES}} = y_{\overrightarrow{KH}}$ so

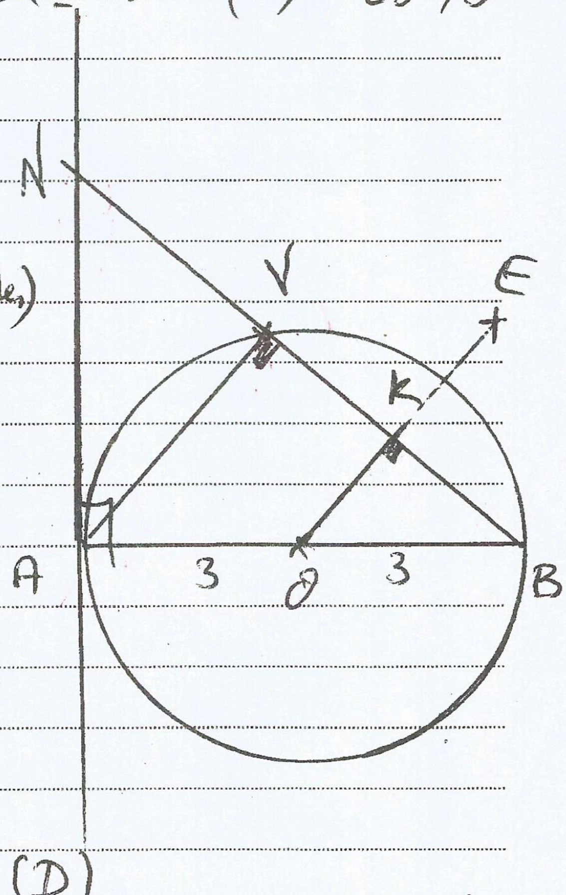
S is the image of E by the translation of vector $\overrightarrow{KH}$
and then ESHK is a parallelogram $(\frac{1}{4})$ $(\frac{3}{4}pt)$

$\mathcal{A}_{ESHK} = 2 \times \mathcal{A}_{\text{right } \triangle HEK} = \cancel{2} \times \frac{HE \times EK}{\cancel{2}} = 6 \times 3 = 18\,u^2$ (1pt).

(a parallelogram is divided into 2 congruent triangles by a diagonal)

6) (d) is increasing since $a_{(d)} = 2 > 0$ so
$\tan \alpha = a_{(d)} = 2$ then $\alpha = \tan^{-1}(2) \simeq 63.43°$

EX5 1) figure is drawn $(\frac{3}{4}pt)$.



2) 1st method

* In $\triangle$ OVB, OV = OB = radii (given)
so $\triangle$OBV is isosceles at O (2 equal sides)
* but K is the midpt of [BV] (given)
so [OK] is the median relative to [BV] and at the same time
the height relative to [BV]. $(\frac{3}{4}pt)$

2nd method

Since V belongs to (C) with diameter [AB] (given) so $\widehat{AVB} = 90°$ (angle facing diameter but
O and K are the respective midpts of [AB] and [BV] so by the midpt theorem (OK) // (AV)
and $\widehat{OKB} = \widehat{AVB} = 90°$ (corresponding angles) $(\frac{3}{4}pt)$