$$2x^2 - 5x = \frac{11}{5}x^2 - 11x$$

$$x\left\{\left(2 - \frac{11}{5}\right)x + 6\right\} = 0$$

$x = 0$ eller $-\frac{1}{5}x = -6$

$x = 6 \cdot 5 = \underline{30}$

$$\Rightarrow |BC| = \frac{5 \cdot x}{\sqrt{x^2 - 5x}} + \sqrt{x^2 - 5x}$$

$$4x^3 - 20x^2 - 2x^3 + 5x^2 = 0$$

$$2x^3 - 15x^2 = 0$$

$$x^2(2x - 15) = 0$$

$x = 0$ eller $x = \frac{15}{2}$ → Umulig pga $x > 5$ fra fig!

eller $x^2 - 5x = 0 \Rightarrow x = 0$ eller $x = 5$

$x(x-5)$

ikke def.

Regner ut $|BC|$:

$x = \frac{15}{2}$:

$$|BC| = \frac{x^2}{\sqrt{x^2 - 5x}} = \frac{\left(\frac{15}{2}\right)^2}{\sqrt{\left(\frac{15}{2}\right)^2 - 5\frac{15}{2}}}$$

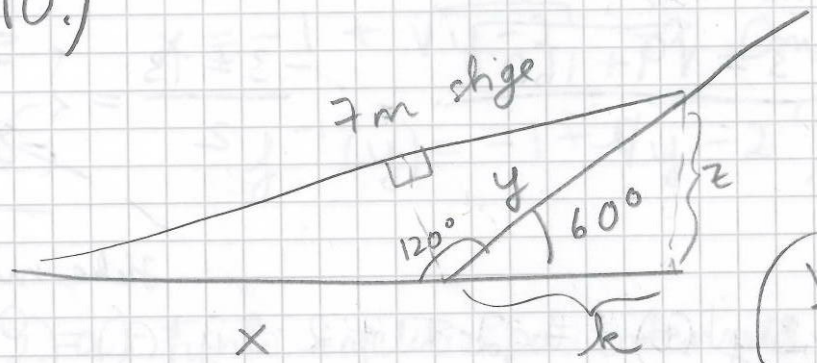
$$= \frac{\frac{225}{4}}{\sqrt{\frac{225 - 150}{4}}} = \frac{225}{\frac{4}{2}\sqrt{75}} = \frac{225}{2\sqrt{75}}$$

$$= \frac{225}{2\sqrt{3 \cdot 25}} = \frac{225}{2 \cdot 5\sqrt{3}} = \frac{45}{2\sqrt{3}}$$

$$= \frac{45\sqrt{3}}{2 \cdot 3} = \frac{15\sqrt{3}}{2}$$

7.2: Koblede hastigheter

10.)



Vis: $x^2 + xy + y^2 = 49$

$\frac{\pi}{3}$

$$\sin 60° = \frac{z}{y}$$

$$\frac{\sqrt{3}}{2} y = z$$

$$\cos 60° = \frac{k}{y} \quad \Rightarrow \quad \frac{1}{2} y = k$$

Pytagoras: $(x+k)^2 + z^2 = 7^2$

$$x^2 + 2kx + k^2 + z^2 = 49$$

$$x^2 + 2\frac{1}{2}yx + \left(\frac{1}{2}\right)^2 y^2 + \left(\frac{\sqrt{3}}{2}\right)^2 y^2 = 49$$

$$x^2 + yx + \frac{1}{4}y^2 + \frac{3}{4}y^2 = 49$$

Har vist: $x^2 + xy + y^2 = 49$

Når $x = 3m$ og nedre del av stige beveger seg mot venstre m/ 2 m/s. Hvor fort glir øvre del nedover? $\Rightarrow x(t) = 3, \; x'(t) = -2, \; y(t) = ?, \; y'(t) = ?$ (pos. fart da x ↓)

Deriverer: $2x(t)x'(t) + x(t)y'(t) + x'(t)y(t) + 2y(t)y'(t) = 0$