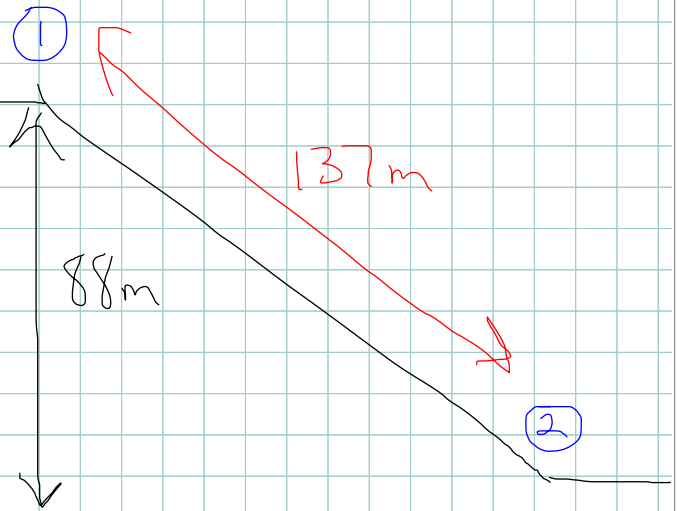


$$F_{\text{NOMB BY C}} = 650 \text{ N}$$

$$t = 3 \text{ s (OF PUSHING TO ①)}$$

$$M_A = 105 \text{ kg}$$

$$M_B = 255 \text{ kg} \quad \mu = 0.11$$



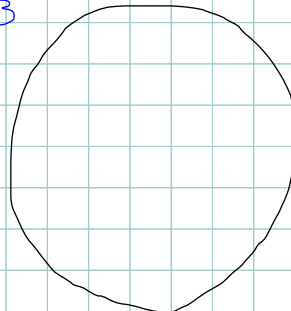
WHAT IS v_1 ? 2.18 m/s

WHAT IS v_2 ?

WHAT IS $F_{\text{N ON A BY B}}$? 189.6 N

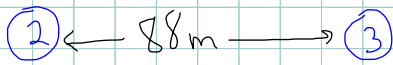
38.77 m/s

FRICTIONLESS LOOP



WHAT IS MAXIMUM RADIUS THAT YOU CAN TRAVERSE?

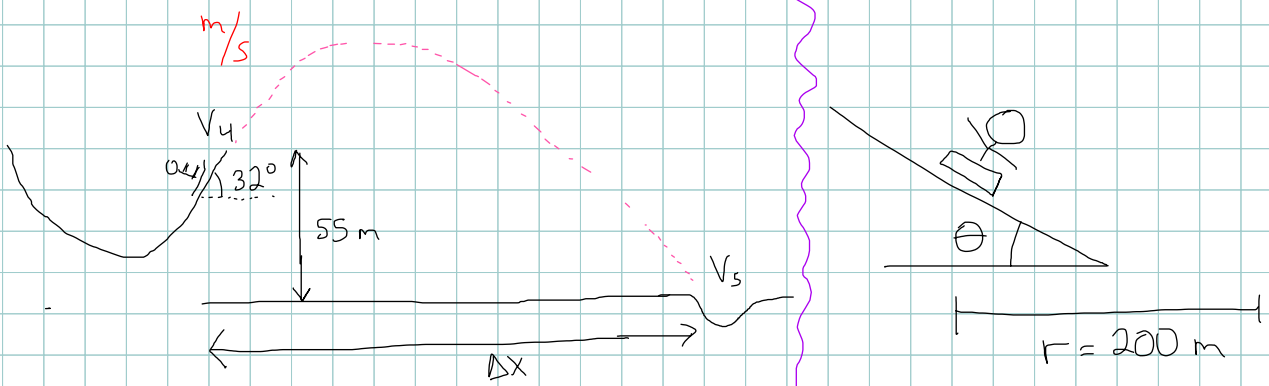
30.5 m



$$F_{f_{2-3}} = 4 \text{ N}$$

$$F_{\text{WIND RESISTANCE}} = 1.5 \text{ N}$$

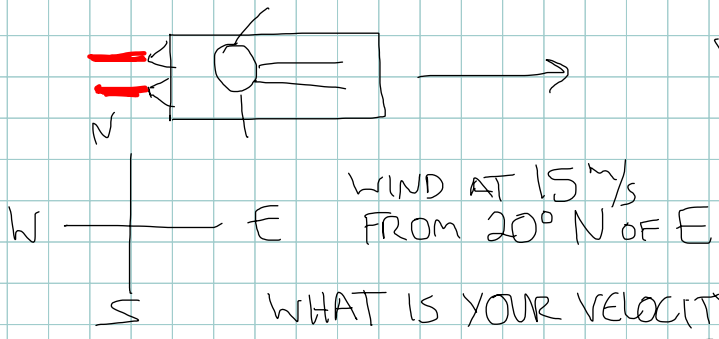
WHAT IS v_3 ? 38.66 m/s



$\Delta x = ?$ 198.03 m
 $v_5 = ?$ (MAGNITUDE + DIRECTION) 50.72 m/s @ 49.7°
 HANG TIME = ? 6.04 s
 PEAK HEIGHT ABOVE GROUND? 76.42 m
 $v_4 = 38.6627$

WHAT IS θ SUCH THAT YOUR SLED EXPERIENCES NO FRICTION WHILE NAVIGATING BANKED CORNER? 52.7°

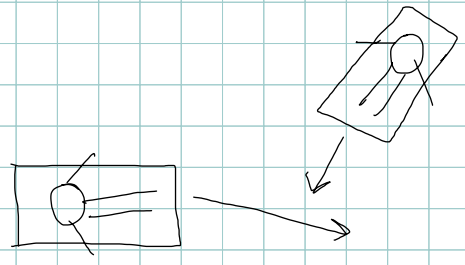
ON FROZEN LAKE!



YOU ENABLE YOUR SLED'S ROCKETS WHICH MAINTAIN YOUR EASTWARD VELOCITY WITH RESPECT TO THE WIND

WIND AT 15 m/s FROM 20° N OF E
 WHAT IS YOUR VELOCITY RELATIVE TO THE LAKE (MAGNITUDE + DIRECTION)? 36.98 m/s @ 7.97° S of E

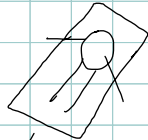
HOW FAR DO YOU TRAVEL IN ONE MINUTE? 2219 m



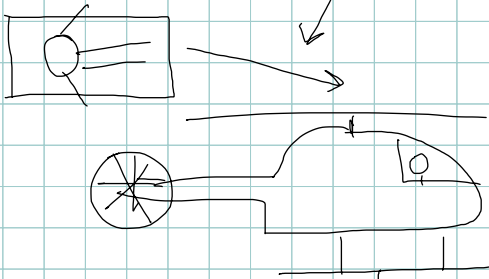
$m = 120$ KG
 $v = 30$ m/s @ 30° W of S

THE SLEDS COLLIDE AND STICK TOGETHER? WHAT IS NEW VELOCITY?

$v = 36.98 \text{ m/s}$
 $@ 7.97^\circ \text{ S of E}$

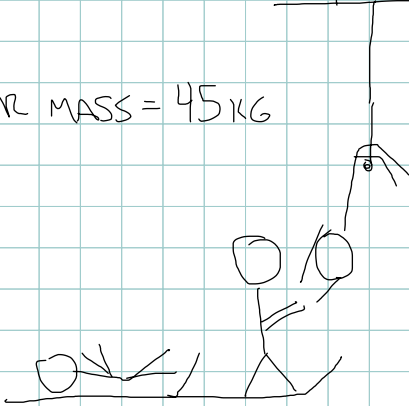


$m = 120 \text{ kg}$
 $v = 30 \text{ m/s} @ 30^\circ \text{ W of S}$



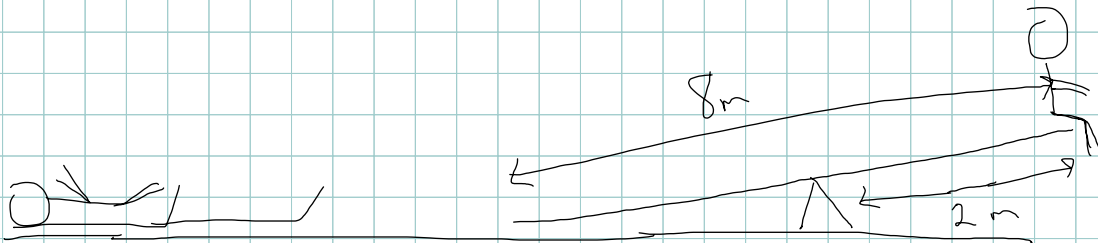
THE SLEDS COLLIDE
 AND STICK TOGETHER? (v_f)
 $18.62 \text{ m/s} @ 60.77^\circ \text{ S of E}$

YOUR MASS = 45 kg



YOU JUMP UP TOWARD
 THE RESCUER...
 HELICOPTER IS HOVERING
 $m \text{ of RESCUER} = 55 \text{ kg}$

VELOCITY AFTER CATCH? (v_a) $8.38 \frac{\text{m}}{\text{s}}$
 HOW HIGH DO YOU SWING? 3.58 m



MASS OF PLANK = 60 kg $m \text{ of STUDENT ON END} = 45 \text{ kg}$

WHERE DO THE 2 SLEDS + STUDENT STOP ON PLANK
 SO IT IS BALANCED? $6.167 \text{ m FROM LEFT END}$

WHAT IS COEFFICIENT OF FRICTION BETWEEN SLED + PLANK?

WHAT IS NORMAL FORCE ON PLANK BY FULCRUM? 2.87
 2793 N