[2] $x = t^2 + 2t - 3$ ∪ $y = 5 + 4t - t^2$ ∩

$x = (t+3)(t-1)$

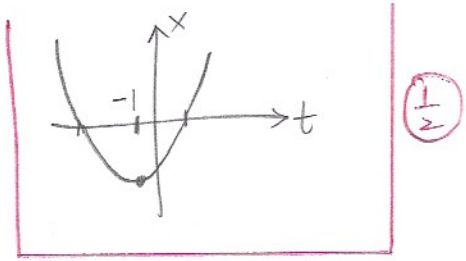
t-INT $= -3, 1$

VERTEX @ $t = \frac{-3+1}{2} = -1$

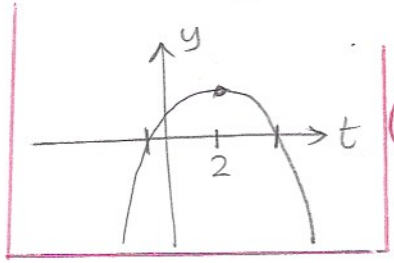
$y = (5-t)(1+t)$

t-INT $= -1, 5$

VERTEX @ $t = \frac{-1+5}{2} = 2$



(1/2)



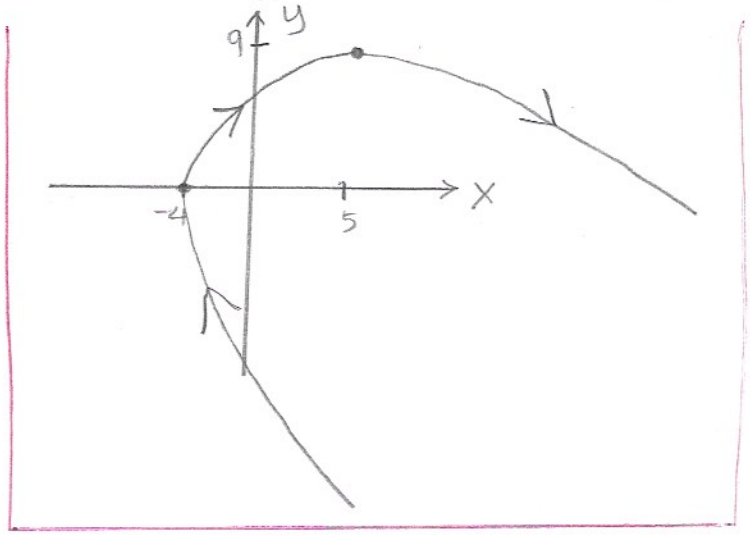
(1/2)

(1)

x DECR, y INCR (1/2)	x INCR, y INCR (1/2)	x INCR, y DECR (1/2)

@ $t = -1$ $(x, y) = (1-2-3, 5-4-1) = \boxed{(-4, 0)}$

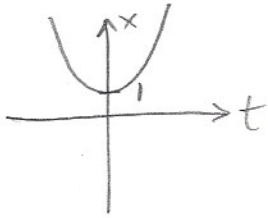
@ $t = 2$ $(x, y) = (4+4-3, 5+8-4) = \boxed{(5, 9)}$



(0) IF YOU DREW THIS GRAPH

(-1/2) IF YOU DIDN'T DRAW THIS GRAPH

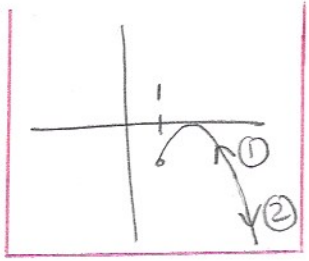
[3] $x = \cosh t$



AS t GOES FROM $-\infty$ TO ∞

x GOES FROM ∞ TO 1 TO ∞ (1)

(IE. FROM FAR RIGHT TO $x = 1$ TO FAR RIGHT)



(0) IF YOU DREW THIS GRAPH WITHOUT EXPLANATION ABOVE FOR ONLY SHOWING THIS PART OF ORIGINAL GRAPH

($\frac{1}{2}$) FOR DIRECTION ARROWS + NUMBERING

[4] $x = \dfrac{t}{t+2}$

$xt + 2x = t$ (1/2)

$2x = t - xt = (1-x)t$

$t = \dfrac{2x}{1-x}$ (1)

(1) $y = \dfrac{2}{\frac{2x}{1-x} - 1} \cdot \dfrac{1-x}{1-x}$

$y = \dfrac{2-2x}{2x-(1-x)}$

(1/2) $y = \dfrac{2-2x}{3x-1}$

[4] ALTERNATE SOLUTION – GRADE AGAINST ONLY 1 VERSION

$y = \frac{2}{t-1}$

$y(t-1) = 2$

$t - 1 = \frac{2}{y}$

(½) $t = 1 + \frac{2}{y}$

(½) $x = \frac{1+\frac{2}{y}}{1+\frac{2}{y}+2} \cdot \frac{y}{y}$

(½) $x = \frac{y+2}{3y+2}$

$x(3y+2) = y+2$

(½) $3xy + 2x = y + 2$

$3xy - y = 2 - 2x$

$(3x-1)y = 2-2x$

(1) $y = \frac{2-2x}{3x-1}$

[5] $(4^2 - 2!) + (5^2 - 3!) + (6^2 - 4!) + (7^2 - 5!)$

$= (16 - 2) + (25 - 6) + (36 - 24) + (49 - 120)$

$= \boxed{14 + 19 + 12 - 71}$ (1½)

$= \boxed{-26}$ (½)

SUBTRACT (½) POINT FOR EACH INCORRECT VALUE — MINIMUM SCORE = 0

[6] $\frac{9}{17} + \frac{16}{13} + \frac{25}{9} + \frac{36}{5} + \frac{49}{1} + \frac{64}{-3} + \frac{81}{-7} + \frac{100}{-11}$

NUMERATORS = $3^2, 4^2, 5^2, \ldots, 10^2$

DENOMINATORS = ARITHMETIC SEQUENCE $d = -4$

START WITH $n=1$ FOR FIRST TERM

$\sum_{n=1}^{8} \frac{(n+2)^2}{17-4(n-1)}$ OR $\sum_{n=0}^{7} \frac{(n+3)^2}{17-4n}$

(½) IF YOU USED SAME LETTER UNDER $\sum$ + INSIDE FORMULA

(½) (½) (1½)

SIMILAR GRADING AS OTHER SOLUTION –

MANY SOLUTIONS POSSIBLE – TALK TO ME

[7] $\frac{2}{3} - \frac{1}{4} = \frac{8-3}{12} = \frac{5}{12}$

$\frac{8}{12} + \frac{5}{12} = \frac{13}{12}$

$\frac{13}{12} + \frac{5}{12} = \frac{18}{12} = \frac{3}{2}$

ARITHMETIC SEQUENCE $\boxed{d = \frac{5}{12}}$ $(\frac{1}{2})$

$a_n = \boxed{\frac{1}{4} + \frac{5}{12}(n-1)} = \frac{13}{2}$ $(\frac{1}{2})$

(1) $\frac{5}{12}(n-1) = \frac{26-1}{4} = \frac{25}{4}$

$n-1 = \frac{25}{4} \cdot \frac{12}{5} = 15$

$\boxed{n = 16}$ $(\frac{1}{2})$

$S_{16} = \boxed{\frac{16}{2}\left(\frac{1}{4} + \frac{13}{2}\right)}$ (1)

$= 8\left(\frac{1}{4} + \frac{13}{2}\right)$

$= 2 + 52$

$= \boxed{54}$ $(\frac{1}{2})$