7 @ Company A: $y = f(x) = 20 + .05x$

ⓑ Company B: $y = g(x) = 5 + .10x$

ⓒ $f(x) = g(x)$

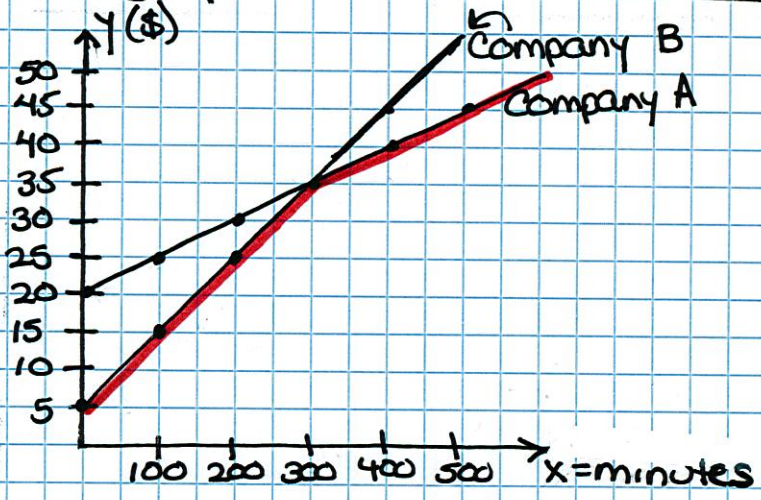
$20 + .05x = 5 + .10x$

$15 = .05x$

$300 = x$

Their costs are the same when $x = 300$ minutes of phone calls

ⓓⓔ use a graph:



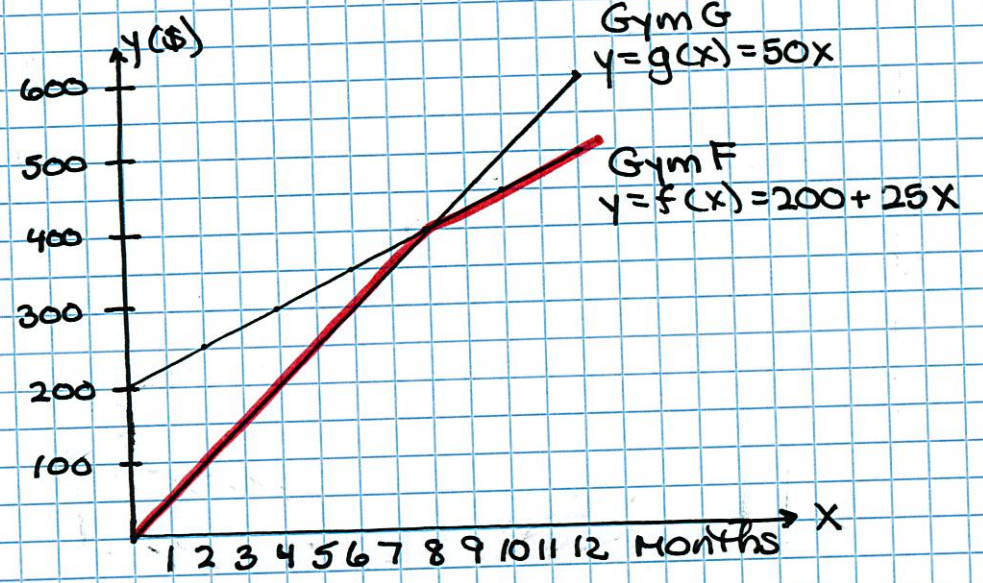
ⓓ Company A costs less if $x > 300$ minutes

ⓔ Company B costs less if $x < 300$ minutes

⑧ ⓐ Gym F: $f(x) = 200 + 25x$

Gym G: $g(x) = 50x$

ⓑ



ⓒ $f(x) = g(x)$

$200 + 25x = 50x$

$200 = 25x$

$8 = x$

Costs are equal at x = 8 months
Cost is $400
(8, 400) is point of intersection

ⓓ Gym G costs less to join if joining for under 8 months. After 8 months, Gym F becomes less expensive to join when looking at total cost over the time period of membership.

9 @ F (FlashNet) $f(x) = 2500 + .06x$

G (Galaxy) $g(x) = .10x$

H (High Speed) $h(x) = 4000 = 4000 + 0x$

ⓑ $f(x) = g(x)$

$2500 + .06x = .10x$

$2500 = .04x$

$62500 = x$ sales

$6250 = y$ wages

(62500, 6250)

$f(x) = h(x)$

$2500 + .06x = 4000$

$.06x = 1500$

$x = 25000$ sales

$y = 4000$ wages

(25000, 4000)

$g(x) = h(x)$

$.10x = 4000$

$x = 40000$ sales

$y = 4000$ wages

(40000, 4000)

ⓒ For sales under \$25000, company H pays the most, \$4000 per month.

For sales between \$25,000 and \$62,500 company F pays the most: \$2500 + 6% of sales

For sales above \$62500, company G pays the most: 10% of sales with no base salary