ANSWER:

The GIPS standards do not require or recommend the following approach, but it is provided here as a resource for consideration by firms facing this situation. There may be other approaches to this situation that may also be appropriate.

The firm should differentiate between the "discretionary" leverage (loans are taken at the discretion of the investment manager) and "non-discretionary" leverage (borrowings are mandated by the client).

When portfolios are leveraged with loans, the following methods to calculate performance should be applied depending on the situation:
1) "Discretionary" leverage: The performance should be calculated on the actual leveraged basis (based on the portfolio market value, net of the loan position)
2) "Non-discretionary" leverage: The performance should be calculated on the unleveraged basis (gross of the loan position). In this case, the loan is treated as additional portfolio capital provided by the client.

In the case of "discretionary" leverage, a firm may also wish to calculate the unleveraged return in addition to the leveraged return so the firm can demonstrate the effect of leverage introduced by the investment manager.

These methods are illustrated with the following formulae (All illustrations assume that no external cash flows occur during the period for which the performance is calculated):

1. Leveraged performance:

$$R_{leveraged} = \frac{NAV_E - NAV_B}{NAV_B} \qquad (1)$$

where:
NAV_E – *net asset value of the portfolio at the end of the period (market value less borrowings)*
NAV_B – *net asset value of the portfolio at the beginning of the period (market value less borrowings)*

2. Unleveraged performance:

$$R_{unleveraged} = \frac{MV_E - MV_B + \text{Interest Expense}}{MV_B} \qquad (2)$$

where:
MV_E – *gross market value of the portfolio at the end of the period (no deduction of borrowings)*
MV_B – *gross market value of the portfolio at the beginning of the period (no deduction of borrowings)*
Interest Expense – *interest expense incurred on the borrowings during the period,*

The interest expense is added back to the net profit in the numerator because, under the assumption of the unleveraged method, the portfolio would not have incurred the expense of borrowing.

In fact, the unleveraged method treats the borrowings in the portfolio as if they were capital contributed by the portfolio owner. It is important to note that in the situation of positive profit, the unleveraged return would be lower than the leveraged return.

The above methods are illustrated using the following example:

Date	Portfolio NAV (after deduction of borrowings), £	Borrowings, £	Portfolio gross MV (before deduction of borrowings), £	Interest expense on borrowings, £	Leveraged return, %	Unleveraged return, %
01.03.2007	900'000	100'000	1'000'000			
31.03.2007	980'000	100'000	1'080'000	2'000	8.89%	8.20%

1. Leveraged return:

$$R_{leveraged} = \frac{980'000}{900'000} - 1 = 8.89\%$$

2. Unleveraged return:

$$R_{leveraged} = \frac{980'000 + 100'000 + 2'000}{900'000 + 100'000} - 1 = 8.20\%$$

3. Treatment of a portfolio that has both discretionary and non-discretionary leverage

This treatment would apply if there is a special situation where one portion of the borrowings is initiated by the client (non-discretionary loans) and has a capital character, and another portion is managed at the discretion of the asset manager (discretionary loan).

In this instance, a firm might wish to calculate the following types of returns:

1) A return where the discretionary portion of the borrowings is treated on an actual leveraged basis (see formula (1) above) and the non-discretionary portion is treated on an unleveraged basis (see formula (2) above).

2) A fully leveraged return for the whole portfolio.

3) A fully unleveraged return for the whole portfolio.

The above method is illustrated using the following example:

Date	Portfolio NAV (after deduction of borrowings), £	Discretionary borrowings, £	Non-discretionary borrowings, £	Interest expense on borrowings, £	Discretionary leveraged return, %	Fully leveraged return, %	Fully unleveraged return, %
01.03.2007	900'000	70'000	30'000				
31.03.2007	980'000	70'000	30'000	2'000	8.67%	8.89%	8.20%

1. Discretionary leveraged return:

$$R_{disc.leveraged} = \frac{980'000 + 30'000 + 0.3 \times 2'000}{900'000 + 30'000} - 1 = 8.67\%$$

Here only 30% of the borrowing costs are added back (corresponding to the 30% share of the non-discretionary borrowings in the total borrowings).

2. Fully leveraged return:

$$R_{leveraged} = \frac{980'000}{900'000} - 1 = 8.89\%$$

3. Fully unleveraged return:

$$R_{leveraged} = \frac{980'000 + 70'000 + 30'000 + 2'000}{900'000 + 70'000 + 30'000} - 1 = 8.20\%$$