

## PollEverywhere Quizzes Week 5

1) Recursion question (Tues lecture):

```
calculate :: Int -> Int -> Int
calculate x y = case x of
  0 -> 0
  n -> y + calculate (n - 1) y
```

Given the function above, work out the result of: calculate 5 4

- a) 5
- b) 4
- c) 10
- d) 20
- e) 9
- f) 16
- g) 15
- h) 3
- i) 200
- j) 1

2) Recursion question 2 (Tues lecture):

```
calculate :: [Int] -> Int
calculate list = case list of
  [] -> 0
  x:xs -> addFour x + calculate xs
```

```
addFour :: Int -> Int
addFour x = x + 4
```

Given the above two functions, work out the result of: calculate [1,2]

- a) 4
- b) 3
- c) 12
- d) 8
- e) 11
- f) 0
- g) 15

3) Recursion question 3 (Wed lecture):

```
calculate :: [Int] -> Int
calculate list = case list of
  [] -> 0
  x:xs -> calculate xs - x
```

Given the above function, work out the result of: calculate [1,2,3,4]

- a) 10
- b) Not possible to calculate
- c) 5
- d) 9
- e) 16
- f) -5
- g) -10
- h) -1
- i) -16
- j) 11
- k) -11

4) Type definition question (Wed lecture):

Suppose there is a function `func :: [a] -> [[a]] -> b -> Bool`. Which of the following would **not** be a correct call of the function? (You may select more than one).

- a) `func [1,2] [["hello"],["bye"]] "bye"`
- b) `func [1,2] [[3,4],[5,6]] [1,2]`
- c) `func [1,2] [[3,4],[5,6]] 4`
- d) `func [True] [[3,4],[5,6]] False`
- e) `func [False] [[True,False],[False,False]] [False]`
- f) `func [False, False] [[3,4],[5,6]] [1,2]`
- g) `func [[1,2],[3,4]] [[[1,2],[3],[4]], [[2,3],[5,6]]] True`

ANSWERS ON THE NEXT PAGE

## ANSWERS

- 1) d 20
- 2) e 11
- 3) g -10
- 4) a, d, f (Note that these are the cases which are **not** correct calls of the function).