

Practice Problem 3.48

A C function `arithprob` with arguments `a`, `b`, `c` and `d` has the following body:

```
return a*b + c*d;
```

It compiles to the following x86-64 code:

```
arithprob:
movslq %ecx,%rcx
imulq %rdx, %rcx
movsbl %sil,%esi
imull %edi, %esi
movslq %esi,%rsi
leaq (%rcx,%rsi), %rax
ret
```

The arguments and return value are all signed integers of various lengths. Arguments `a`, `b`, `c` and `d` are passed in the appropriate regins of registers `%rdi`, `%rsi`, `%rdx` and `%rcx`, respectively. Based on this assembly code, write a function prototype describing the return and argument types of `arithprob`.