Still normalized?

1. Compare the exponents of the two numbers; shift the smaller number to the right until its exponent would match the larger exponent

2. Add the significands

3. Normalize the sum, either shifting right and incrementing the exponent or shifting left and decrementing the exponent

Overflow or underflow?

Yes

Exception

No

4. Round the significand to the appropriate number of bits

Still normalized?

No

Yes

Done

FIGURE 3.15 Floating-point addition. The normal path is to execute steps 3 and 4 once, but if rounding causes the sum to be unnormalized, we must repeat step 3. Copyright © 2009 Elsevier, Inc. All rights reserved.