PSUEDOCODE:

START

  WHILE True DO

    PROMPT "Enter a numerator:"

    STORE input as numerator

    PROMPT "Enter a denominator:"

    STORE input as denominator

    IF denominator is 0 THEN

      PRINT "Denominator cannot be zero."

      CONTINUE to prompt for input

    ENDIF

    ABSOLUTE value of numerator to abs_numerator

    ABSOLUTE value of denominator to abs_denominator

    IF abs_numerator < abs_denominator THEN

      PRINT "proper fraction"

    ELSE

      SET mixed_integer = abs_numerator // abs_denominator

      SET mixed_numerator = abs_numerator % abs_denominator

      IF mixed_numerator == 0 THEN

        PRINT "can be reduced to mixed_integer"

      ELSE

        DETERMINE sign of mixed fraction

PRINT mixed fraction format

ENDIF

ENDIF

BREAK from loop

ENDWHILE

END

TEST RUNS:

```
10 / 2 is an improper fraction and it can be reduced to 5.
avi@MacBookPro ~ % /usr/local/bin/python3 /Users/avi/Desktop/Fractions.py
Enter a numerator: 9
Enter a denominator (not zero): 8
9 / 8 is an improper fraction and its mixed fraction is 1 + 1 / 8.
```

```
avi@MacBookPro ~ % /usr/local/bin/python3 /Users/avi/Desktop/Fractions.py
Enter a numerator: 10
Enter a denominator (not zero): 3
10 / 3 is an improper fraction and its mixed fraction is 3 + 1 / 3.
```

```
avi@MacBookPro ~ % /usr/local/bin/python3 /Users/avi/Desktop/Fractions.py
Enter a numerator: 20
Enter a denominator (not zero): 7
20 / 7 is an improper fraction and its mixed fraction is 2 + 6 / 7.
```

```
avi@MacBookPro ~ % /usr/local/bin/python3 /Users/avi/Desktop/Fractions.py
Enter a numerator: -7
Enter a denominator (not zero): 4
-1
3
-7 / 4 is an improper fraction and its mixed fraction is -(1 + 3 / 4).
```

```
avi@MacBookPro ~ % /usr/local/bin/python3 /Users/avi/Desktop/Fractions.py
Enter a numerator: -13
Enter a denominator (not zero): 7
-1
6
-13 / 7 is an improper fraction and its mixed fraction is -(1 + 6 / 7).
```