

1. Find a format option that would result in the following output format:

```
>> 5/16 + 2/7
ans =
    67/112
```

hint: use help format

2. Use help elfun and calculate the following:

```
>> val = atanh(2)
>> val2 = conj(val1)
>> real(val1)
>> imag(val1) + imag(val2)
>> sind(90)
>> tand(45)
```

3. In the ASCII character encoding, the letters of the alphabet are, in order: 'a' comes before 'b' and also 'A' comes before 'B'. However, which comes first e lower or uppercase letters?

4. What would be the result of the following expressions?

```
'b' >= 'c' - 1
3 == 2 + 1
(3 == 2) + 1
xor(5 < 6, 8 > 4)
```

5. In special relativity, the *Lorentz* factor is a number that describes the effect of speed on various physical properties when the speed is significant relative to the speed of light. Mathematically, the Lorentz factor is given as:

$$\gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

Use $3 \cdot 10^8$ (m/s) for the speed of light, c . Create variables for c and the speed v and from them a variable *lorentz* for the Lorentz factor.