Pictoral addition of different size and shape bivectors.

```
<< peeters`;
peeters`setGitDir["../project/figures/GAelectrodynamics"]
```

```
/Users/pjoot/project/figures/GAelectrodynamics
```

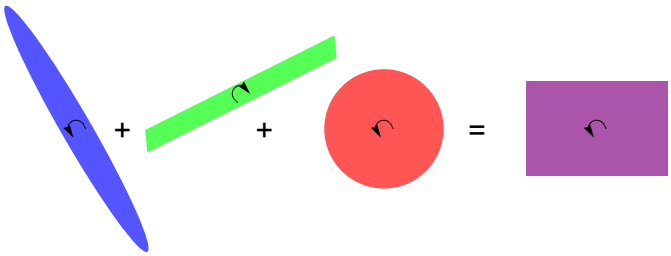
```
ClearAll[e1, e2, e3]
{e1, e2, e3} = IdentityMatrix[3];

(*2D vector inputs*)
area[a_, b_] := Module[{aa, bb},
    aa = {a, 0} // Flatten;
    bb = {b, 0} // Flatten;
    Cross[aa, bb] // Norm
  ];

arc[or_, r_] := Arrow[Take[CirclePoints[or, {r, 0}, 10], 8] // BSplineCurve]
rarc[or_, r_] :=
 Arrow[Take[CirclePoints[or, {r, 0}, 10], 8] // Reverse // BSplineCurve]
sz := Style[#, FontSize → 16] &;
p = Module[{o, o2, o3, o4, a1, b1, f1, f2, arcrad},
  {f1, f2} = IdentityMatrix[2];
  a1 = 2 {1, 1 / 2};
  b1 = -{0.2, -2};
  b1 = b1 / area[a1, b1];
  o = {-0, -1 / 2};
  o2 = {5, 0};
  arcrad = 0.7 / 2 / Sqrt[Pi];
  o3 = {-1.5, 0};
  o4 = {8, -1};

  Graphics[{
    Arrowheads[0.02],
    Green // Lighter,
    Parallelogram[o, {2 a1, b1}],
    Black,
    rarc[o + 2 a1 / 2 + b1 / 2, arcrad],
    Red // Lighter,
```

```
    Disk[o2, Sqrt[5 / Pi]],
    Black,
    arc[o2, arcrad],
    Blue // Lighter,
    Rotate[Disk[o3, {3, 1 / Pi}], 2 Pi / 3],
    Purple // Lighter,
    Parallelogram[o4, {3 f1, 2 f2}],
    Black,
    arc[o3, arcrad],
    arc[o4 + (3 f1 + 2 f2) / 2, arcrad],
    Text["+" // sz, {2.5, 0}] ,
    Text["+" // sz, {-0.5, 0}] ,
    Text["=" // sz, {7, 0}]
   }]
 ]
```




```
peeters`exportForLatex["bivectorAdditionInPlaneFig1", p]
```

```
{bivectorAdditionInPlaneFig1.eps, bivectorAdditionInPlaneFig1pn.png}
```