1.2.6

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Question

Plot the points (x, y) given in Table 1.2.6.

x	-2	-1	0	1	3
y	8	7	-1.25	3	-1

Table: 1.2.6

C Code - Ploting Points

```c
#include <stdio.h>
#include <math.h>

int main() {
    double theta = 60.0;
    double A[2] = {-2.00, 8.00};
    double B[2] = {-1.00, 7.00};
    double D[2] = {0.00, -1.25};
    double C[2] = {1.00, 3.00};
    double E[2] = {3.00, -1.00};

    printf("Point A: (%.2f, %.2f)\n", A[0], A[1]);
    printf("Point B: (%.2f, %.2f)\n", B[0], B[1]);
    printf("Point C: (%.2f, %.2f)\n", C[0], C[1]);
    printf("Point D: (%.2f, %.2f)\n", D[0], D[1]);
    printf("Point E: (%.2f, %.2f)\n", E[0], E[1]);
    return 0;
}
```

Python Code

```
import matplotlib
matplotlib.use('Agg')
import matplotlib.pyplot as plt


x = [-2, -1, 0, 1, 3]
y = [8, 7, -1.25, 3, -1]


plt.figure(figsize=(6, 4))
plt.axhline(0, color='black', linewidth=1) # x-axis
plt.axvline(0, color='black', linewidth=1) # y-axis
plt.scatter(x, y, color='tab:blue', s=60, zorder=3)
plt.plot(x, y, color='tab:blue', linestyle='--', alpha=0.7,
    zorder=2)
```

Python Code

```
for xi, yi in zip(x, y):
    plt.annotate(f'({xi}, {yi})', (xi, yi), textcoords="offset
        points", xytext=(5, 5), fontsize=9)

plt.title('Plot of given points')
plt.xlabel('x')
plt.ylabel('y')
plt.grid(True, linestyle=':', alpha=0.6)

plt.xlim(min(x) - 0.5, 5) # x-axis goes up to 5
plt.ylim(min(y) - 0.5, 10) # y-axis goes up to 10


plt.tight_layout()
plt.savefig('fig1.png', dpi=200)
```

Graph