

|   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|   |    |    |    | A  | R  | N  | D  | C  | Q  | E  | G  | H  | I  | L  | K  | M  | F  | P  | S  | T  | W  | Y  | V  |    |
|   |    |    |    | 5  | -2 | -1 | -2 | 0  | -1 | -1 | 0  | -2 | -2 | -2 | -1 | -1 | -3 | -1 | 1  | 0  | -3 | -2 | 0  | -A |
|   |    |    |    |    | 7  | 0  | -2 | -4 | 1  | 0  | -3 | 0  | -3 | -3 | 3  | -2 | -3 | -3 | -1 | -1 | -2 | -2 | -3 | -R |
| A | 5  |    |    |    |    | 7  | 2  | -2 | 0  | 0  | -1 | 1  | -3 | -3 | 0  | -2 | -3 | -2 | 1  | 0  | -3 | -2 | -3 | -N |
| R | -2 | 7  |    |    |    |    | 8  | -4 | 0  | 2  | -2 | 0  | -4 | -4 | 0  | -3 | -4 | -1 | 0  | -1 | -4 | -3 | -4 | -D |
| N | -1 | 0  | 7  |    |    |    |    | 13 | -3 | -4 | -3 | -2 | -2 | -2 | -4 | -1 | -2 | -3 | -1 | -1 | -3 | -2 | -1 | -C |
| D | -2 | -2 | 2  | 8  |    |    |    |    | 7  | 2  | -2 | 1  | -3 | -2 | 2  | -1 | -3 | -1 | 0  | -1 | -2 | -1 | -3 | -Q |
| C | 0  | -4 | -2 | -4 | 13 |    |    |    |    | 7  | -3 | -1 | -4 | -3 | 1  | -2 | -4 | -1 | -1 | -1 | -3 | -2 | -3 | -E |
| Q | -1 | 1  | 0  | 0  | -3 | 7  |    |    |    |    | 8  | -2 | -4 | -5 | -2 | -4 | -4 | -2 | 0  | -2 | -3 | -4 | -4 | -G |
| E | -1 | 0  | 0  | 2  | -4 | 2  | 7  |    |    |    |    | 10 | -4 | -2 | 0  | -2 | -2 | -3 | -1 | -2 | -1 | 2  | -3 | -H |
| G | 0  | -3 | -1 | -2 | -3 | -2 | -3 | 8  |    |    |    |    | 6  | 2  | -3 | 1  | 0  | -3 | -3 | -1 | -2 | -1 | 4  | -I |
| H | -2 | 0  | 1  | 0  | -2 | 1  | -1 | -2 | 10 |    |    |    |    | 5  | -3 | 3  | 1  | -3 | -3 | -2 | -1 | -1 | 1  | -L |
| I | -2 | -3 | -3 | -4 | -2 | -3 | -4 | -4 | -4 | 6  |    |    |    |    | 6  | -2 | -4 | -2 | 0  | -1 | -3 | -2 | -3 | -K |
| L | -2 | -3 | -3 | -4 | -2 | -2 | -3 | -5 | -2 | 2  | 5  |    |    |    |    | 7  | 1  | -3 | -2 | -1 | -2 | -1 | 1  | -M |
| K | -1 | 3  | 0  | 0  | -4 | 2  | 1  | -2 | 0  | -3 | -3 | 6  |    |    |    |    | 8  | -3 | -3 | -2 | 2  | 4  | -1 | -F |
| M | -1 | -2 | -2 | -3 | -1 | -1 | -2 | -4 | -2 | 1  | 3  | -2 | 7  |    |    |    |    | 10 | -1 | -1 | -3 | -3 | -3 | -P |
| F | -3 | -3 | -3 | -4 | -2 | -3 | -4 | -4 | -2 | 0  | 1  | -4 | 1  | 8  |    |    |    |    | 5  | 2  | -4 | -2 | -2 | -S |
| P | -1 | -3 | -2 | -1 | -3 | -1 | -1 | -2 | -3 | -3 | -3 | -2 | -3 | -3 | 10 |    |    |    |    | 6  | -3 | -2 | 0  | -T |
| S | 1  | -1 | 1  | 0  | -1 | 0  | -1 | 0  | -1 | -3 | -3 | 0  | -2 | -3 | -1 | 5  |    |    |    |    | 15 | 3  | -3 | -W |
| T | 0  | -1 | 0  | -1 | -1 | -1 | -1 | -2 | -2 | -1 | -2 | -1 | -1 | -2 | -1 | 2  | 6  |    |    |    |    | 9  | -1 | -Y |
| W | -3 | -2 | -3 | -4 | -3 | -2 | -3 | -3 | -1 | -2 | -1 | -3 | -2 | 2  | -3 | -4 | -3 | 15 |    |    |    |    | 5  | -V |
| Y | -2 | -2 | -2 | -3 | -2 | -1 | -2 | -4 | 2  | -1 | -1 | -2 | -1 | 4  | -3 | -2 | -2 | 3  | 9  |    |    |    |    |    |
| V | 0  | -3 | -3 | -4 | -1 | -3 | -3 | -4 | -3 | 4  | 1  | -3 | 1  | -1 | -3 | -2 | 0  | -3 | -1 | 5  |    |    |    |    |
|   | A  | R  | N  | D  | C  | Q  | E  | G  | H  | I  | L  | K  | M  | F  | P  | S  | T  | W  | Y  | V  |    |    |    |    |

