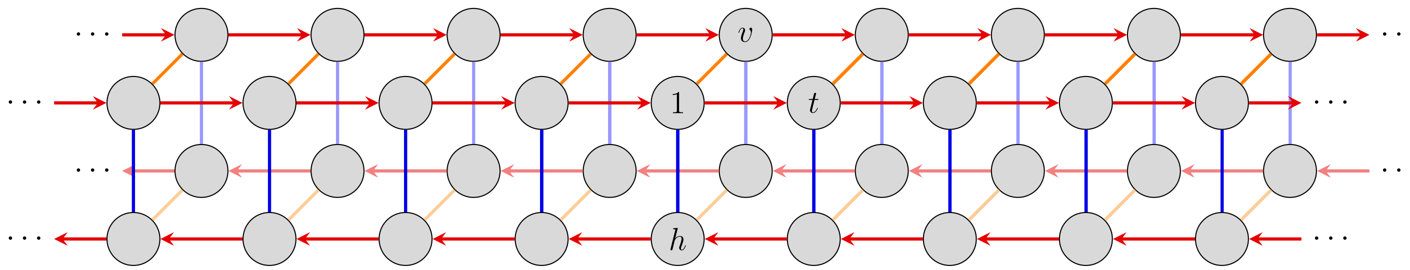
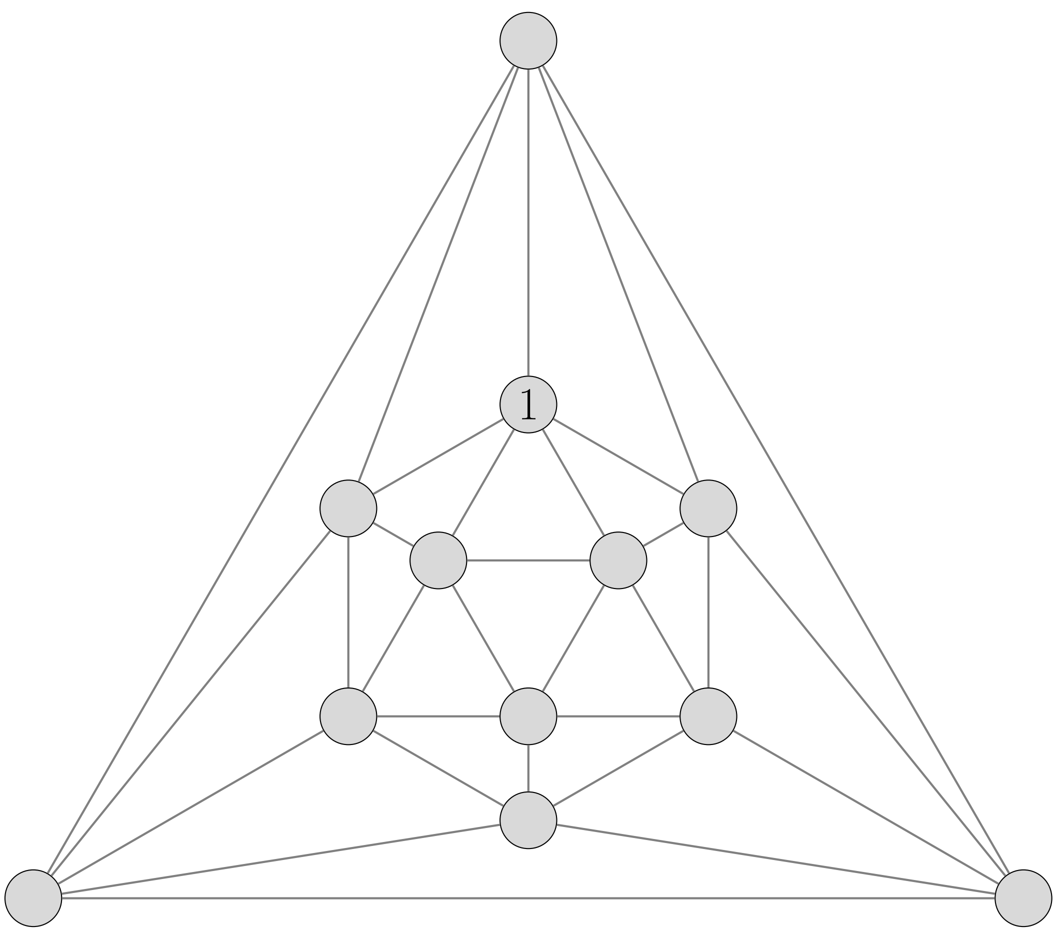
Supplemental material for Math 8510, HW 1

#1(a): Cayley graph for the frieze group $\mathbf{Frz}_1 = \langle t, v, h \rangle$, generated by a translation, vertical reflection, and horizontal reflection.



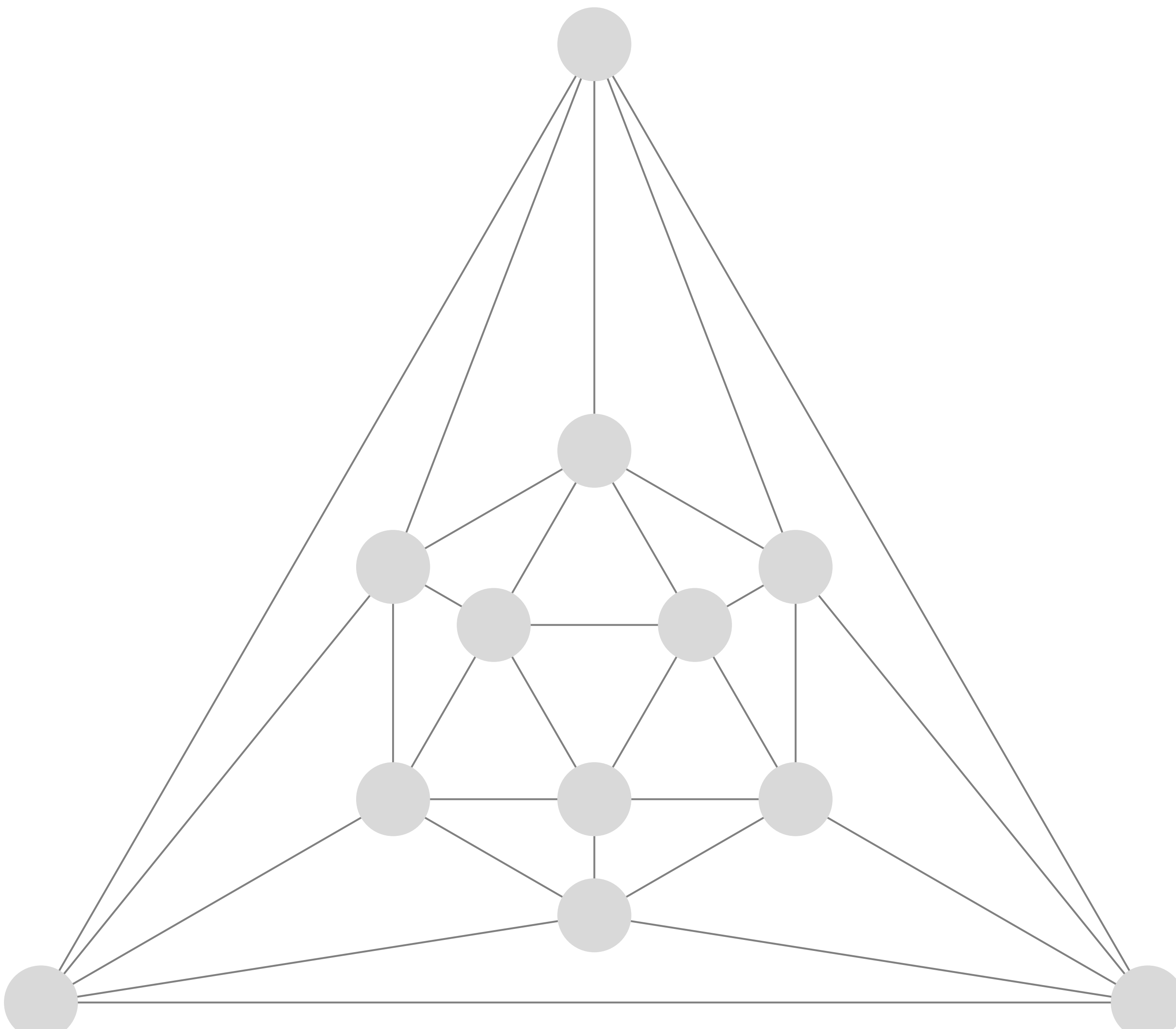
#4: Cayley graph of the group $G = \langle a, b, c \mid a^2 = b^3 = c^3 = abc = 1 \rangle$ on the skeleton of the icosahedron, labeled with this generating set.



#4: Cayley graph of the group

$$G = \big\langle a, b, c \mid a^2 = b^3 = c^3 = abc = 1 \big\rangle$$

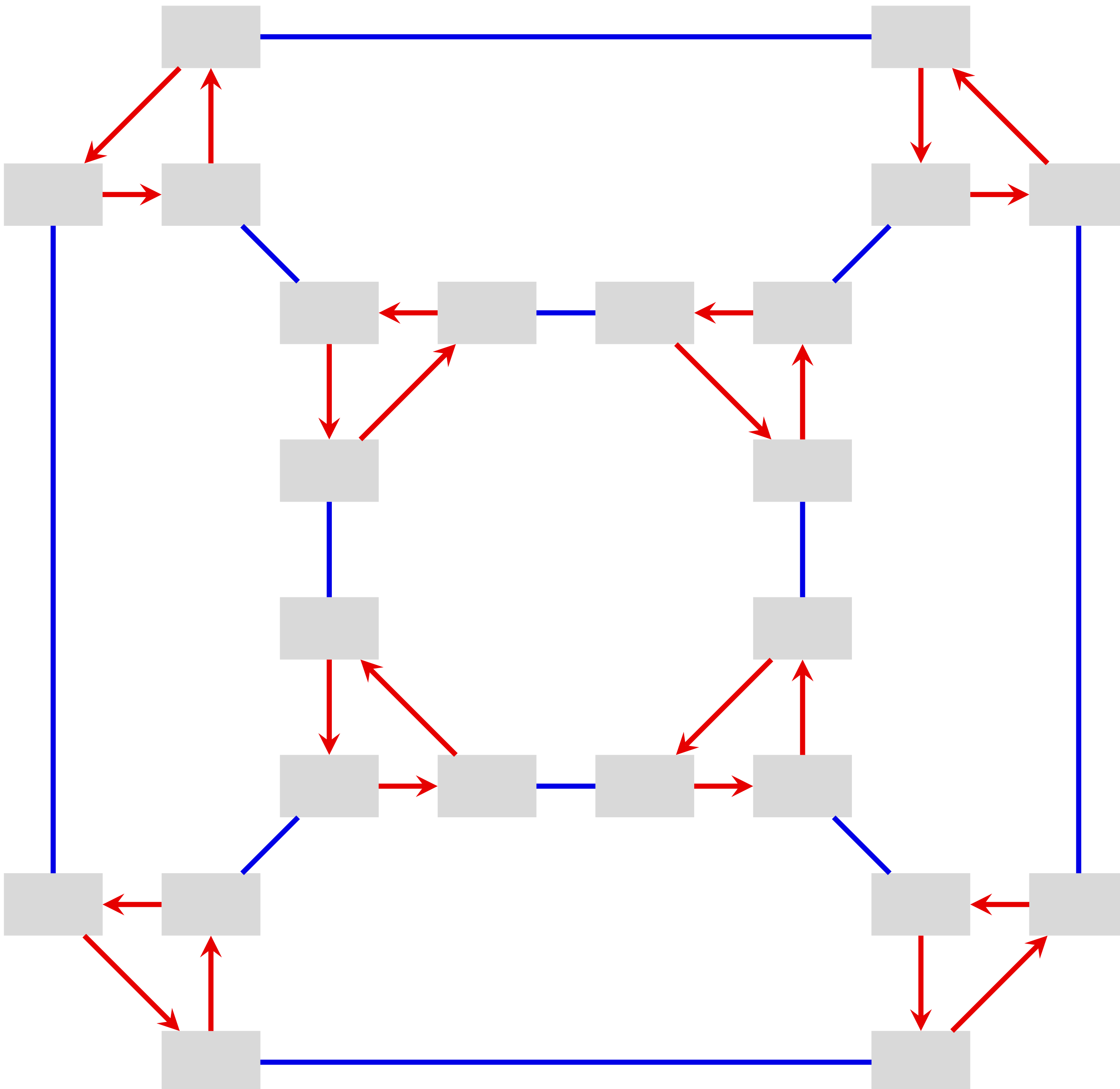
on the skeleton of the icosahedron, with nodes labeled by the elements of the familiar group it is isomorphic to. Since it has order 12, it must be either $C_{12} = \langle r \rangle$, $C_6 \times C_2 = \big\langle (r, s) \big\rangle$, $D_6 = \langle r, f \rangle$, $A_4 = \big\langle (123), (12)(34) \big\rangle = \big\langle (123)(234) \big\rangle$, or $\mathrm{Dic}_6 = \langle r, s \rangle$.



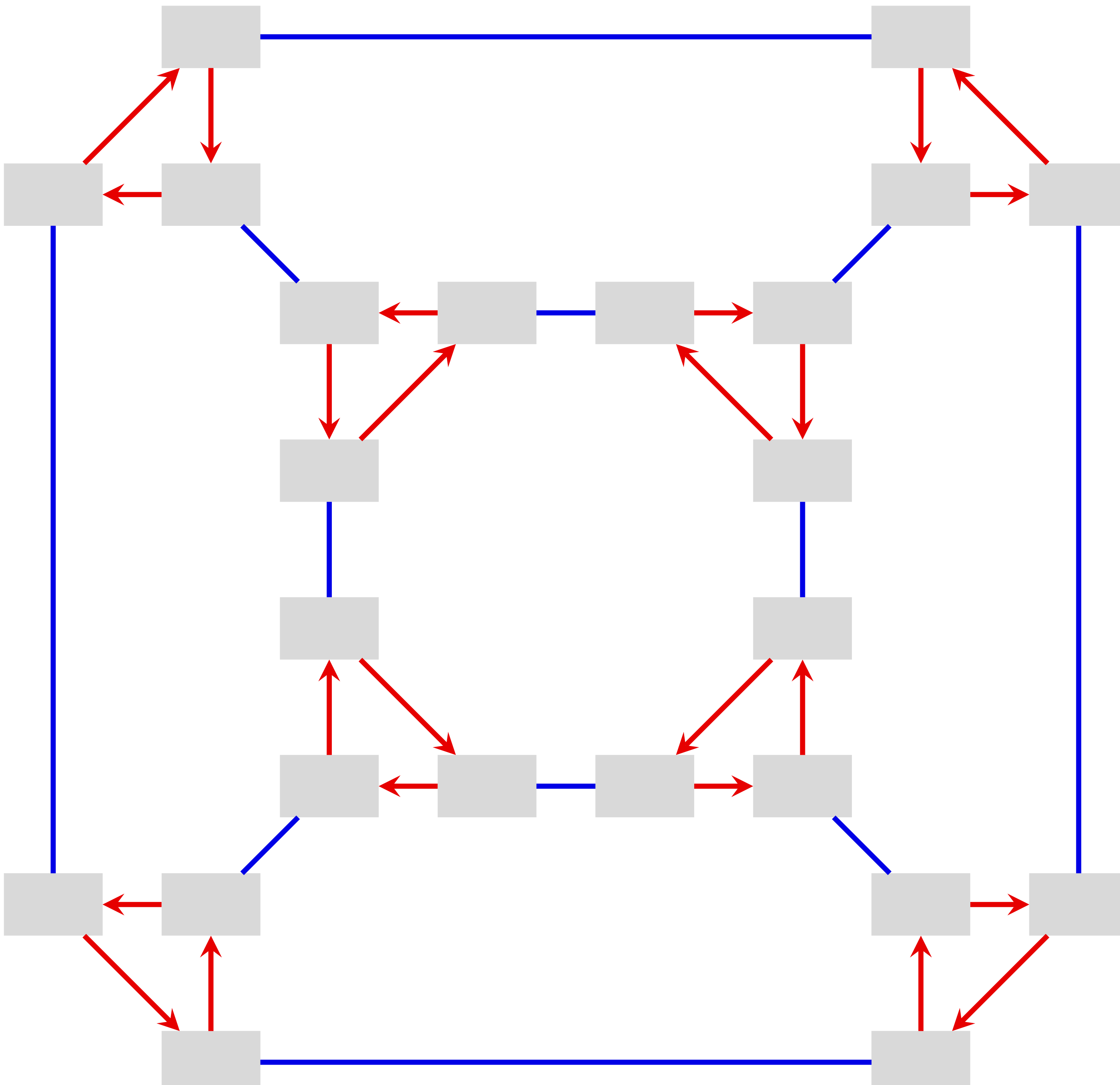
#5: Cayley table of a quotient of a group of order 16.

	± 1	$\pm a$	$\pm b$	$\pm c$	$\pm w$	$\pm x$	$\pm y$	$\pm z$
± 1								
$\pm a$								
$\pm b$								
$\pm c$								
$\pm w$								
$\pm x$								
$\pm y$								
$\pm z$								

#6: Cayley graph of the first mystery group of order 24.



#6: Cayley graph of the second mystery group of order 24.



Blank copies of **Frieze 1** to use as scratch paper for #1.