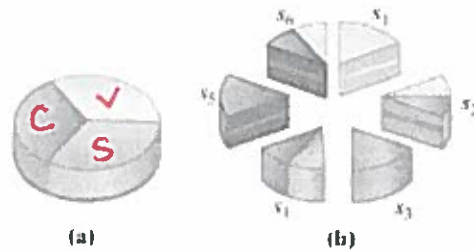


Karla and 5 other friends jointly buy the chocolate-strawberry-vanilla cake shown for \$45 and plan to divide the cake among themselves. After much discussion, the cake is divided into the six equal sized slice s_1, s_2, \dots, s_6 . Suppose that Karla values chocolate cake three times as much as vanilla cake and vanilla cake two times as much as strawberry cake.



1. Find the dollar value to Karla of each of the slices s_1 through s_6 .

$$C = 6x = \$30$$

$$S = x = \$5$$

$$V = 2x = \$10$$

$$9x = 45$$

$$x = \$5.00$$

$$s_1 = \frac{1}{2}(16) = \$5.00$$

$$s_2 = \frac{1}{4}(10) + \frac{1}{4}(5) = \$3.75$$

$$s_3 = \frac{1}{2}(\$5) = \$2.50$$

$$s_4 = \frac{1}{4}(5) + \frac{1}{4}(30) = \$8.75$$

$$s_5 = \frac{1}{2}(\$30) = \$15.00$$

$$s_6 = \frac{1}{4}(30) + \frac{1}{4}(10) = \$10.00$$

Sum to \$45.00

2. Which of the slices s_1 through s_6 are fair shares to Karla?

$$\frac{45}{6} = \$7.50$$

s_4, s_5, s_6