

## Multi-Step Word Problems

1. The Hewitt family is buying carpet for two rooms. The dining room is a square that measures 12 feet on each side. The den is 9 yards by 5 yards. Mrs. Hewitt has budgeted \$2,650 for carpeting both rooms. The green carpet she is considering costs \$42.75 per square yard, and the brown carpet's price is \$4.95 per square foot. What are the ways she can carpet the rooms and stay within her budget?

2. AAA Taxi charges \$1.75 for the first mile and \$1.05 for each additional mile. How far could Mrs. Leslie travel for \$20 if she tips the cab driver \$2.50?

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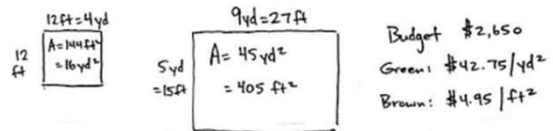
### Solution A

Green: \$42.75/yd<sup>2</sup>      Brown: \$4.95/ft<sup>2</sup>  
 \$4.75/ft<sup>2</sup>                      \$4.95/ft<sup>2</sup>

Dining	Den	Total
Gr: 144 ft <sup>2</sup> × \$4.75/ft <sup>2</sup> = \$684	Gr: 45 yd <sup>2</sup> × \$42.75/yd <sup>2</sup> = \$1,923.75	\$2,607.75 (J)
Gr: \$684	Br: 45 yd <sup>2</sup> × \$4.95/yd <sup>2</sup> = \$222.75	\$2,636.75 (X)
Br: 144 ft <sup>2</sup> × \$4.95/ft <sup>2</sup> = \$712.80	Gr: \$1,923.75	\$2,636.55 (J)
Br: \$712.80	Br: \$2,004.75	\$2,717.55 (X)

Mrs. Hewitt has 2 choices: both rooms in green, or the Den in green & the Dining Room in brown.

### Solution B



Budget \$2,650  
 Green: \$42.75/yd<sup>2</sup>  
 Brown: \$4.95/ft<sup>2</sup>

Dining Rm Green: 16 × 42.75 = 684  
 Brown: 144 × 4.95 = 712.80

Den Green: 45 × 42.75 = 1,923.75  
 Brown: 405 × 4.95 = 2,004.75

Den	Ⓐ 1,923.75	Ⓒ 1,923.75	Ⓓ 2,004.75	Ⓔ 2,004.75
Dining Rm	Ⓒ + 684.00	Ⓓ + 712.80	Ⓔ + 712.80	Ⓕ + 684.00
	<u>2,607.75</u>	<u>2,636.55</u>	<u>2,717.55</u>	<u>2,688.75</u>

Mrs. Hewitt can have both rooms green or the den green & the dining room brown.

2. AAA Taxi charges \$1.75 for the first mile and \$1.05 for each additional mile. How far could Mrs. Leslie travel for \$20 if she tips the cab driver \$2.50?

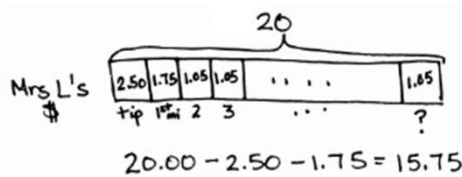
### Solution A

Mile

- 1) \$1.75 + \$2.50 (tip) = \$4.25
- 2) \$4.25 + \$1.05 = \$5.30
- 3) \$5.30 + \$4.20 = \$9.50
- 4) \$9.50 + \$4.20 = \$13.70
- 5) \$13.70 + \$4.20 = \$17.90
- 6) \$17.90 + \$1.05 = \$18.95
- 7) \$18.95 + \$1.05 = \$20.00

Mrs. Leslie can travel 16 miles for \$20.

### Solution B



$$\begin{array}{r} 15 \\ 105 \overline{) 1575} \\ \underline{-105} \phantom{0} \\ 525 \\ \underline{-525} \\ 0 \end{array}$$

Mrs. Leslie can go 16 miles.