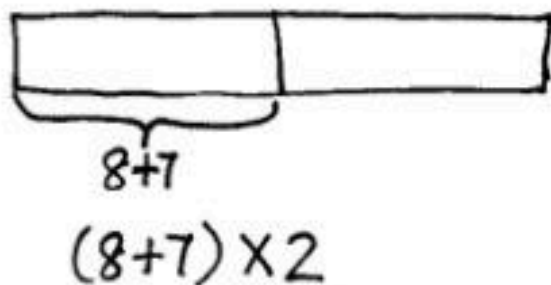1. Draw a model. Then write the numerical expressions.
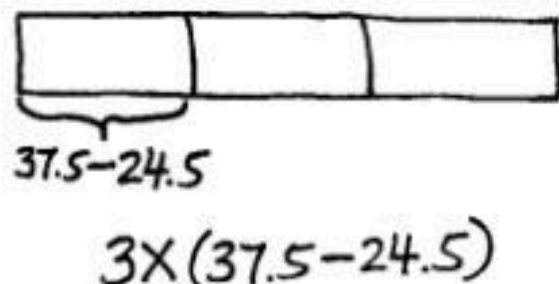
a. The sum of 8 and 7, doubled
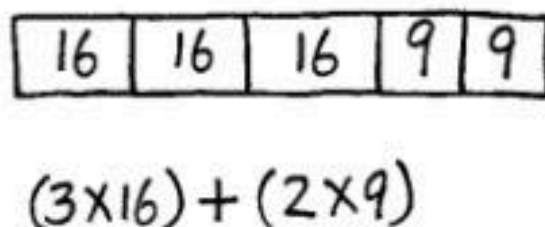
8+7

$$(8+7) \times 2$$

b. 4 times the sum of 14 and 26

14+26

$$4 \times (14+26)$$
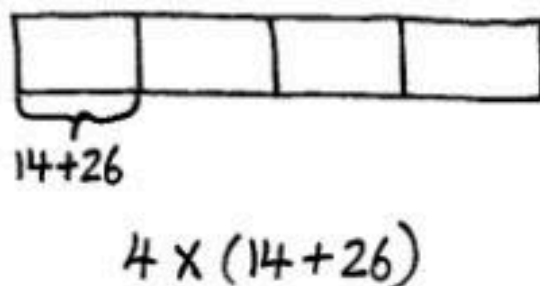
c. 3 times the difference between 37.5 and 24.5

37.5−24.5

$$3 \times (37.5−24.5)$$

d. The sum of 3 sixteens and 2 nines

| 16 | 16 | 16 | 9 | 9 |

$$(3 \times 16) + (2 \times 9)$$

e. The difference between 4 twenty-fives and 3 twenty-fives

| 25 | 25 | 25 | 25 |

| 25 | 25 | 25 |

?

$$(4 \times 25) − (3 \times 25)$$
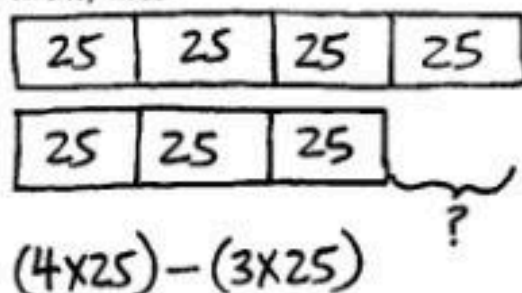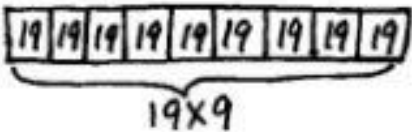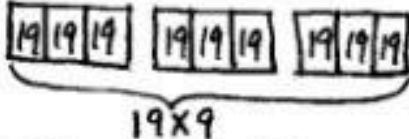
f. Triple the sum of 33 and 27

33+27

$$(33 \times 27) \times 3$$
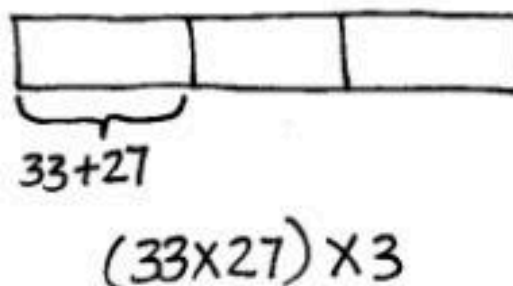
2. Write the numerical expressions in words.

	Expression	Words	The Value of the Expression
a.	12 × (5 + 25)	12 times the sum of 5 and 25	360
b.	(62 − 12) × 11	11 times the difference between 62 and 12	550
c.	(45 + 55) × 23	23 times the sum of 45 and 55	2,300
d.	(30 × 2) + (8 × 2)	the sum of 30 twos and 8 twos	76

3. Compare the two expressions using >, <, or =. In the space beneath each pair of expressions, explain how you can compare without calculating. Draw a model if it helps you.

a. 24 × (20 + 5) $>$ (20 + 5) × 12

It's greater than because the left side shows 24 groups of (20+5), but the right side only has 12 groups of (20+5).

b. 18 × 27 $<$ 20 twenty-sevens minus 1 twenty-seven

It's less than because the left side shows 18 twenty-sevens, and the right side shows 19 twenty-sevens.

c. 19 × 9 $=$ 3 nineteens, tripled

| 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |

19×9

| 19 | 19 | 19 | | 19 | 19 | 19 | | 19 | 19 | 19 |

19×9

Both sides are equal. They're both 19 groups of 9.

4. Mr. Huynh wrote *the sum of 7 fifteens and 38 fifteens* on the board.

   a. Draw a model and write the correct expression.

   7 fifteens

   | 15 | 15 | 15 | · · · | 15 |

   | 15 | 15 | 15 | · · · | 15 |

   } ? $(7 \times 15) + (38 \times 15)$

   38 fifteens
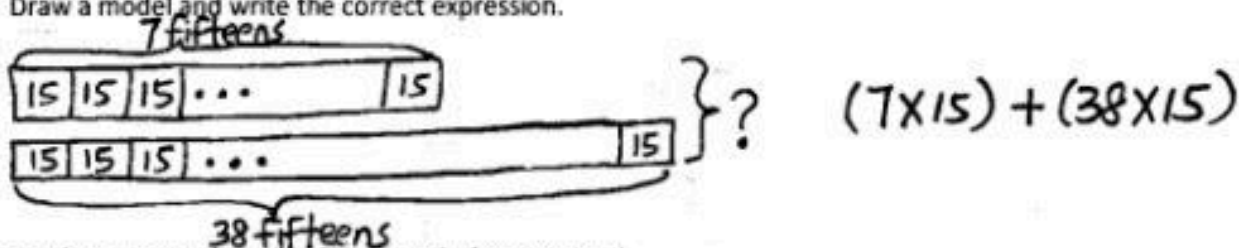
5. Two students wrote the following numerical expressions.

   Angeline: $(7 + 15) \times (38 + 15)$

   MeiLing: $15 \times (7 + 38)$

   Are the students' answers equivalent to your answer in part (a)? Explain your answer.

   Angeline's answer was equivalent to my answer, but not MeiLing's.
   MeiLing's expression showed 15 times the sum of 7 and 38.

6. A box contains 24 oranges. Mr. Lee ordered 8 boxes for his store and 12 boxes for his restaurant.

   a. Write an expression to show how to find the total number of oranges ordered.

   $(24 \times 8) + (24 \times 12)$ or $24 \times (8 + 12)$ or (24×20)

   b. Next week, Mr. Lee will both double the number of boxes he orders. Write a new expression to represent the number of oranges in next week's order.

   $\left((24 \times 8) + (24 \times 12)\right) \times 2$ or $(24 \times 20) \times 2$

   c. Evaluate your expression from part b to find the total number of oranges ordered in both weeks.

   Week 1: $(24 \times 20) = 480$

   Week 2: $(24 \times 20) \times 2 = 960$

   $$\begin{array}{r} 480 \\ + 960 \\ \hline 1440 \end{array}$$

   Mr. Lee ordered 1440 oranges in both weeks.