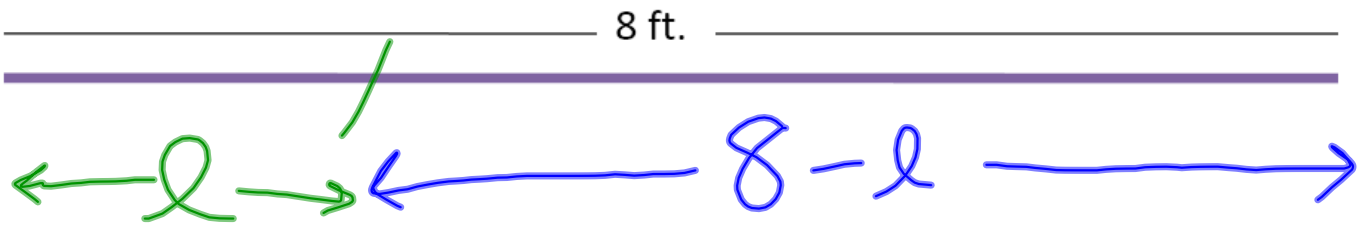
Translating Verbal Phrases

- 4 less than the quantity 6 times a number n.
- subtraction parentheses multiplication
- $(6 \times n) - 4$
- 3 times the sum of 7 and a number y.
- addition
- $3 \cdot (7 + y)$
- The difference of 22 and the square of a number m.
- subtraction exponent
- $22 - m^2$

Example 1

- A piece of ribbon l feet long is cut from a ribbon 8 feet long. Write an expression for the length (in feet) of the remaining piece.



Example 2

- Suppose your friends share a cell phone plan. They pay a basic charge of $35 and $8.80 for 40 extra minutes. Find their total bill if they use 35 extra minutes.

$35 + 8.80 for 40 minutes

35

7.70

$42.70

$\frac{35}{40} = \frac{x}{8.80}$

Less than

Inequalities

Symbol	Meaning
<	Less than
>	Greater than
≤	Less than or equal to
≥	Greater than or equal to
=	Equal to

Translating Verbal Phrases

- The product of 6 and a number *n* is at least 24.

multiplication greater or equal

$6 \cdot n \geq 24$

- A number *y* is no less than 5 and no more than 13.

$\geq$ greater or equal $\leq$ less or equal

$y \geq 5$ and $y \leq 13$

$5 \leq y \leq 13$

$20 > 13$

$13 < 20$

Example 3

- **Is 4 a solution of the inequality or equation?**

$15 - 3x = 3$

$15-3(4)=3$

$15-12=3$

$3=3$ true

$2z + 5 < 8$

$2(4)+5<8$

$8+5<8$

$13<8$ false

$7 - 2n > 0$

$7-2(4)>0$

$7-8>0$

$-1>0$ false

Example 4

- **The last time you and 3 friends went paint-balling, you had a coupon for $10 off and paid a total of $19 for 4 tickets. What is the regular price of a single ticket?**

4 tickets = 19

4 tickets = 29

$$
\begin{array}{r}
7.25 \\
4\overline{)29} \\
28 \\
\hline
10 \\
8 \\
\hline
20
\end{array}
$$

$$
\begin{array}{r}
\boxed{4.75} \\
4\overline{)19} \\
16 \\
\hline
30 \\
28 \\
\hline
20
\end{array}
$$

Translate the verbal phrase into an expression.

1. 7 more than a number b $7+b$
2. The product of 11 and a number x $11x$
3. 70 divided by a number m $\frac{70}{m}$
4. $\frac{1}{3}$ of a number y ↳ multiplication $\frac{1}{3}y$
5. The difference of 18 and a number c $18-c$
6. The sum of a number t and 20 $t+20$

16. Photographs You can print color photos from your digital camera at a photo printing kiosk. The cost is \$.25 per photo. Write an expression for the total cost if you print p photos. How much does it cost you to print 12 photos?

miles per hour = $\frac{\text{miles}}{\text{hours}}$ × hours = miles

$\frac{\$.25}{\text{photo}} \cdot p \text{ photos} = \$$

$\$.25p$ $p=12$

12 × \$.25 = \$3

1
12
.25
60
240
3.00

1. The difference of 4 and a number n is equal to 14.
2. The difference of a number n and 4 is no more than 14.
3. The difference of 4 and a number n is at least 14.
4. The difference of a number n and 14 is at most 4.

21. Locker Installation Your school is replacing a section of old lockers. When the old lockers are removed, there is a space that is 165 inches long. Each new locker has a width of 11 inches. You write the equation $11x = 165$ to model the situation. What do the 11, x, and 165 represent? Use mental math to solve the equation.

23. Die-Cast Cars You buy a storage case that holds 150 collectible die-cast cars. You have 132 die-cast cars. Write an inequality that describes how many more cars you can buy and still have no more cars than the case will hold. You buy 24 cars. Will they all fit in the case?

Homework:

p. 18, 3-27 by 3, 31, 36
p. 24, 3-27 by 3, 40, 43

$3, 6, 9, 12 \cdots 27 + 31 + 36$

$3, 6, 9, 12 \cdots 27 + 40 + 43$