



Calamitous Clod has switched all the numbers in these multiplication problems around!

EXAMPLE

Rearrange the numbers to make them easier to multiply. Then, find the product.

$$\boxed{2} \times \boxed{2} \times \boxed{5} \times \boxed{5}$$

We pair up these numbers to make them easier to multiply:

$$\boxed{2} \times \boxed{2} \times \boxed{5} \times \boxed{5}$$

$$2 \times 2 \times 5 \times 5 = (2 \times 5) \times (2 \times 5) = 10 \times 10 = \boxed{100}$$

PRACTICE

Rearrange the numbers to make them easier to multiply. Then, find the product.

104. $\boxed{2} \times \boxed{2} \times \boxed{2} \times \boxed{5} \times \boxed{5} \times \boxed{5}$

104. _____

105. $\boxed{5} \times \boxed{9} \times \boxed{2} \times \boxed{2} \times \boxed{5}$

105. _____

106. $\boxed{5} \times \boxed{5} \times \boxed{2} \times \boxed{8} \times \boxed{7}$

106. _____

107. $\boxed{2} \times \boxed{4} \times \boxed{5} \times \boxed{2} \times \boxed{6} \times \boxed{2} \times \boxed{5} \times \boxed{5}$

107. _____

Clod also erased all of the multiplication and addition symbols in the equations below!

EXAMPLE

Fill in each of the blanks below with a $+$ or a \times to make the equation true.

$$8 \square (2 \square 3) = 40.$$

40 is a multiple of 8, so we guess the first blank will be \times . We know that $8 \times 5 = 40$, and $2 + 3 = 5$, so we place a $+$ in the second blank to get $8 \times (2 + 3) = 40$.

We place the correct symbols in the blanks:

$$8 \times (2 + 3) = 40.$$



PRACTICE

Fill in each blank below with a $+$ or a \times to make the equations true. Remember that parentheses tell you what to do first.

108. $7 \square (2 \square 9) = 25$

109. $6 \square (2 \square 3) = 36$

110. $(5 \square 2) \square 3 = 13$

111. $(6 \square 2) \square (2 \square 4) = 64$

112. $(9 \square 4) \square (4 \square 2) = 44$

113. $(9 \square 1) \square (4 \square (2 \square 8)) = 200$

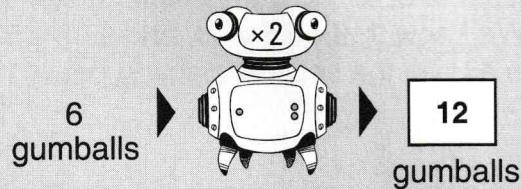




A Duplibot **doubles** the number of items you give it.

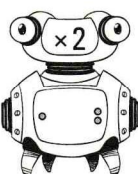
For example, if you give this Duplibot 6 gumballs, it will produce $6 \times 2 = 12$ gumballs.

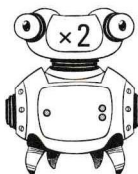
EXAMPLE

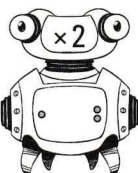


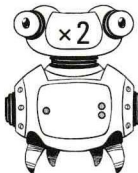
PRACTICE

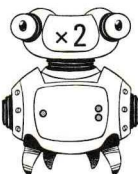
How many gumballs will each Duplibot produce?

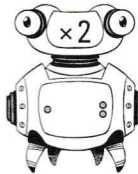
114. 7 gumballs →  → gumballs

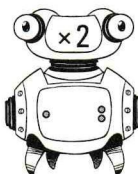
115. 10 gumballs →  → gumballs

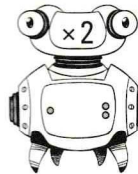
116. 20 gumballs →  → gumballs

117. 32 gumballs →  → gumballs

118. 42 gumballs →  → gumballs

119. 17 gumballs →  → gumballs

120. 58 gumballs →  → gumballs

121. 115 gumballs →  → gumballs



A Splitbot produces *half* of the number of items you give it.

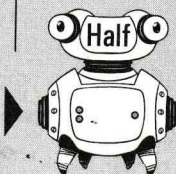
For example, if you give this Splitbot 12 gumballs, it will produce 6 gumballs.

MULTIPLICATION

Double, Half, Times Ten

EXAMPLE

12
gumballs

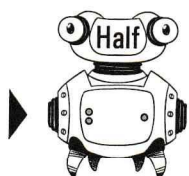


6
gumballs

PRACTICE

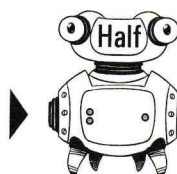
How many gumballs will each Splitbot produce?

122. 6
gumballs



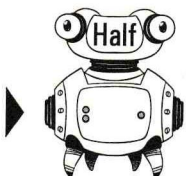
gumballs

123. 20
gumballs



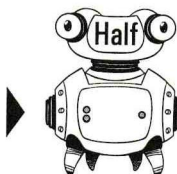
gumballs

124. 48
gumballs

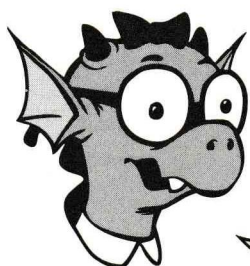


gumballs

125. 106
gumballs



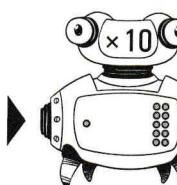
gumballs



A Decabot multiplies the number of items you give it by ten.

EXAMPLE

12
gumballs

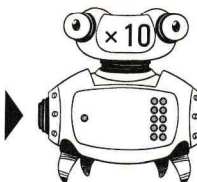


120
gumballs

PRACTICE

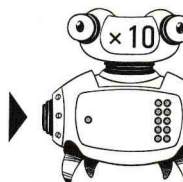
How many gumballs will each Decabot produce?

126. 4
gumballs



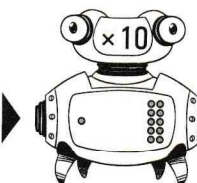
gumballs

127. 15
gumballs



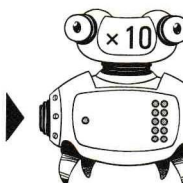
gumballs

128. 30
gumballs



gumballs

129. 76
gumballs



gumballs

MULTIPLICATION

Double, Half, Times Ten



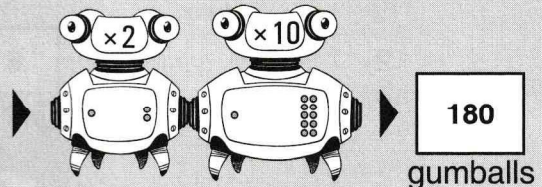
When two bots are connected, they create a Combobot.

For example, when you attach a Duplibot and a Decabot, the Duplibot doubles the number of items...

...and the Decabot takes the new number of items and multiplies it by ten.

EXAMPLE

9 gumballs



$$9 \times 2 = 18, 18 \times 10 = 180.$$

PRACTICE

How many gumballs will each Combobot produce?

130. 6 gumballs

gumballs

131. 7 gumballs

gumballs

132. 4 gumballs

gumballs

133. 8 gumballs

gumballs

134. 5 gumballs

gumballs

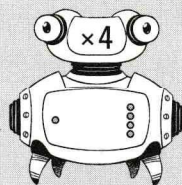


Combobots
can be used
to replace a bot
that is not
working.

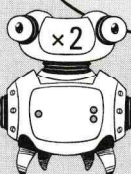
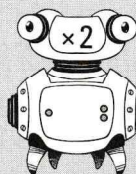
For example,
multiplying by
4 is the same as
doubling twice.

Double, Half, Times Ten

So, we
could replace
this Tetrabot with
a Combobot that
doubles twice.



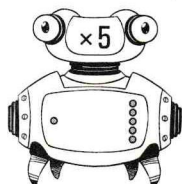
Tetrabot:
Multiplies by 4.



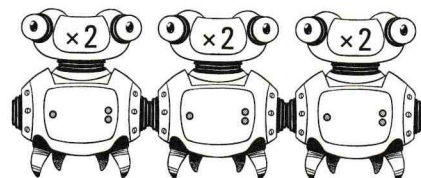
PRACTICE

Draw a line from each bot on the left to the Combobot
on the right that could be used to replace it.

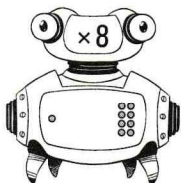
135.



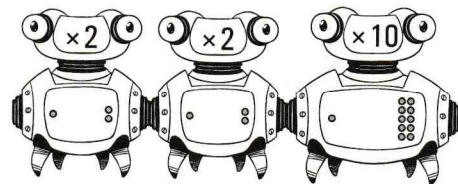
Pentabot: Multiplies by 5.



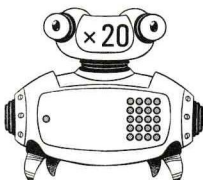
136.



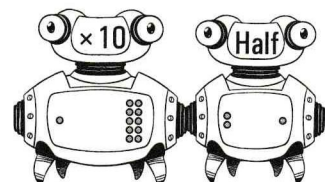
Octobot: Multiplies by 8.



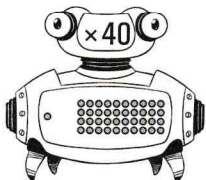
137.



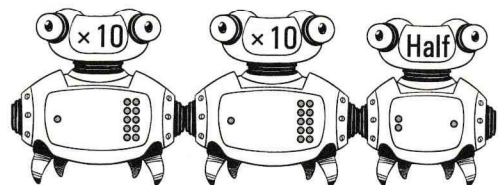
Icosabot: Multiplies by 20.



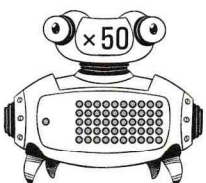
138.



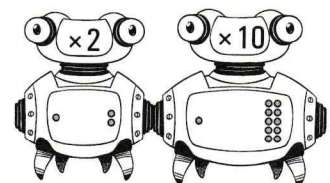
Tetradecabot: Multiplies by 40.



139.



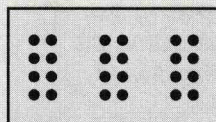
Semicentibot: Multiplies by 50.



Grogg made all of the following pictures using only gumballs.

EXAMPLE

How many gumballs did Grogg use to create the picture below?



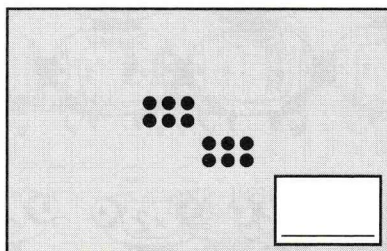
There are 3 groups of $4 \times 2 = 8$ gumballs. All together, there are $3 \times (4 \times 2) = 3 \times 8 = 24$ gumballs. Grogg used **24** gumballs in this picture.



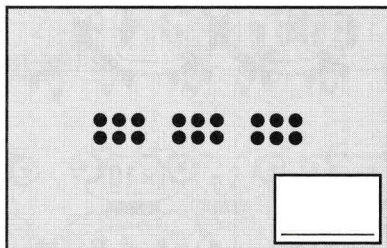
PRACTICE

In the blanks, write the number of gumballs Grogg used to create each picture. Then, draw a line between the pictures that use the same number of gumballs.

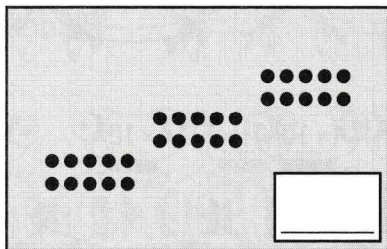
140.



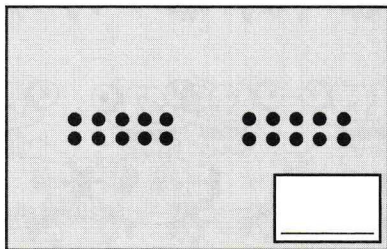
142.



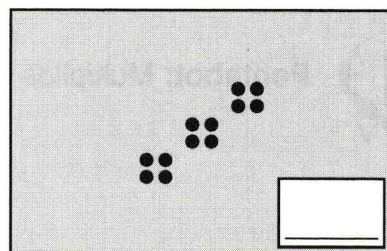
144.



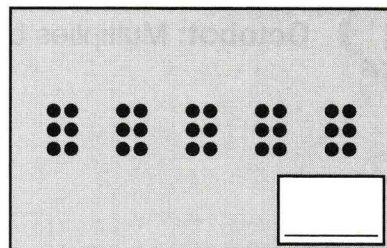
146.



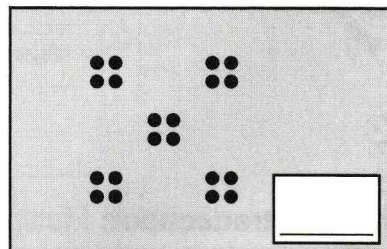
141.



143.



145.



147.

