Concepts

Do operations inside the grouping symbols first.

$2 + (6 \times 3)$

grouping symbols

We say:
$6 \times 3 = 18$ then
$2 + 18 = 20$.

Do (6×3) first.

1
a $30 + (16 \div 4)$
b $23 - (14 + 6)$
c $4 + (5 \times 6)$

d $8 \div (16 - 12)$
e $30 - (30 - 10)$
f $46 - (19 + 11)$

g $(12 - 10) \times (20 - 5)$
h $(8 + 7) \div (13 - 8)$
i $6 \times (3 + 6 + 1)$

Concepts

If only addition and subtraction are present, do the operations in order, going from left to right.

Example: $14 - 6 + 4 - 3$
$= 8 + 4 - 3$
$= 12 - 3$
$= 9$

$+ -$

2
a $30 + 6 - 11$
b $21 - 12 + 8$
c $37 - 12 - 6$

d $60 + 14 - 4$
e $16 + 10 - 9$
f $33 - 10 + 3$

g $40 - 10 - 8 - 2$
h $42 + 8 + 9 - 7$
i $64 - 4 - 6 + 12$

Concepts

If only multiplication and division are present, do the operations in order, going from left to right.

Example: $4 \times 5 \div 10 \times 3$
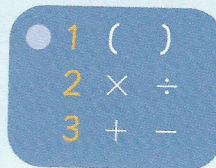$= 20 \div 10 \times 3$
$= 2 \times 3$
$= 6$

$\times \div$

3
a $3 \times 4 \times 2$
b $9 \div 3 \times 5$
c $5 \times 6 \div 10$

d $12 \div 4 \times 6$
e $14 \div 7 \times 9$
f $20 \div 5 \times 3$

g $24 \div 6 \times 2 \div 4$
h $3 \times 8 \div 2 \div 3$
i $3 \times 2 \times 2 \div 6$

Concepts

Order: 1 Grouping symbols
2 $\times$ and $\div$, left to right
3 $+$ and $-$, left to right

Example: $15 - (12 - 2) \div 5$
$= 15 - 10 \div 5$
$= 15 - 2$
$= 13$

1 ( )
2 $\times$ $\div$
3 $+$ $-$

4
a $3 + 7 \times 8$
b $20 - 3 \times 2$
c $9 - 18 \div 3$

d $15 + 4 \times 5$
e $16 - (13 - 8) \times 2$
f $6 \times 8 - (3 \times 7)$

g $6 + (8 - 3) \div 5$
h $18 + 20 \times 2 \div 5$
i $40 - 8 + 4 \times 2$

NS3.3 Selects and applies appropriate strategies for multiplication and division

NS3.2

This flow chart really helps.

Concepts

START
↓
Do operations inside grouping symbols.
↓
Do multiplication and division going from left to right.
↓
Do addition and subtraction going from left to right.
↓
STOP

Example

$8 \times (3 + 4) - 12 \div (1 + 2)$
Remove grouping symbols.
$= 8 \times 7 - 12 \div 3$
Do multiplication and division.
$= 56 - 4$
Do addition and subtraction.
$= 52$

Order
1 ( )
2 × and ÷
3 + and −

1
a $3 \times (5 + 5)$ ⬚   b $6 - 3 \times 2$ ⬚   c $7 + 16 \div 4$ ⬚

d $10 - (8 - 4)$ ⬚   e $(16 - 6) \times 8$ ⬚   f $(15 + 3) \div 6$ ⬚

g $14 - 6 \times 2$ ⬚   h $18 + 10 \div 2$ ⬚   i $50 \div 5 \times 5$ ⬚

j $20 \div 5 - 4$ ⬚   k $16 \times 3 + 40$ ⬚   l $16 + 3 \times 40$ ⬚

2
a $2 \times 3 + 2 \times 10$ ⬚   b $4 + 6 \times 7 + 3$ ⬚

c $6 \times 8 - 7 \times 4 - 4$ ⬚   d $15 \times (6 + 11 - 7)$ ⬚

e $(6 + 3) \times 7 - 15 + 1$ ⬚   f $80 - (63 - 13) + 7$ ⬚

g $8 - 5 + 5 - 8 + 8 + 2$ ⬚   h $16 + 4 \times 18 \div 2 - 4$ ⬚

i $150 + (0 \div 7) \times 10 - 50$ ⬚   j $74 - 8 - 8 - (8 - 8)$ ⬚

k $15 \div (3 \times 5) + (3 \times 5)$ ⬚   l $50 + 16 \div (8 \div 8) - (6 \times 8)$ ⬚

3 Put in grouping symbols to make each sentence true.

a $16 - 3 \times 2 = 26$ b $6 - 3 \times 2 = 6$ c $10 \times 6 + 4 = 100$

d $6 \times 3 + 5 = 48$ e $50 \div 5 + 5 = 5$ f $70 \div 10 - 3 = 10$

g $27 - 14 - 8 = 21$ h $4 + 3 \times 12 - 2 - 10 = 72$
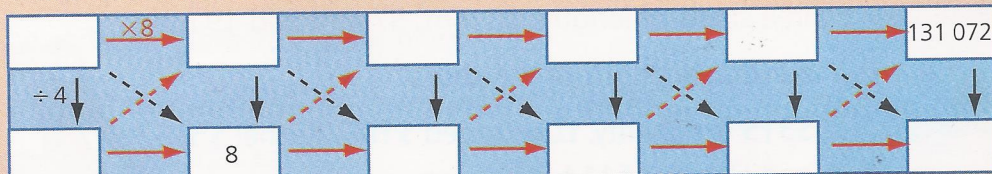
i $100 \times 40 - 20 - 10 = 1000$

Example

$6 + 12 \div 3 + 1 = 9$
Guess and check
$(6 + 12) \div 3 + 1 = 7$ **No**

$6 + 12 \div (3 + 1) = 9$ **Yes**

Fun Spot

A bridge of numbers

4 a Fill in these rectangles if the solid black arrows mean $\div 4$
and the solid coloured arrows mean $\times 8$.

⬚ ×8→ ⬚ → ⬚ → ⬚ → ⬚ → 131 072
÷4↓
⬚ → 8 → ⬚ → ⬚ → ⬚ → ⬚

Calculator Challenge

What operation is needed to link the boxes along:

b the black broken arrows? ⬚   c the coloured broken arrows? ⬚