How Old Are They?

T1

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w+3=b$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2(w+3)=J$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old 1

Jan is 22 ✓ years old

Show your work.

$w+(w+3)+2(w+3)=41$

$w+w+3+2w+6=41$

$4w+9=41$

$-9 \quad -9$

$\frac{4w}{4}=\frac{32}{4}$

$w=8$

$8+3=11$

$2(11)=22$ ✓

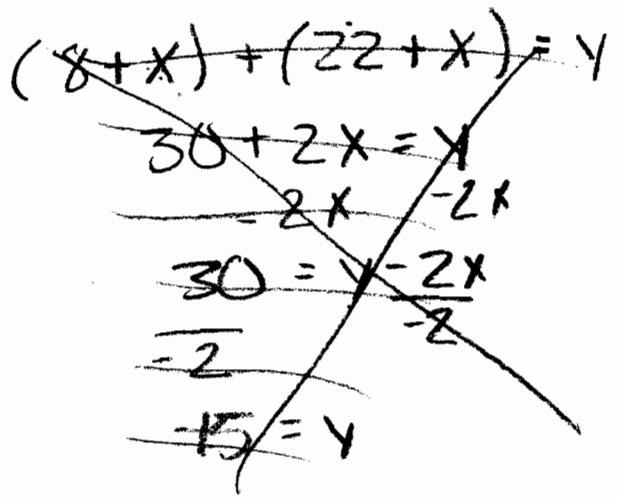
$22-8=14$ 1

4. In how many years will Jan be twice as old as Will? 6 ✓ years

T1

Explain how you figured it out.

because Jan is 14 years older than will so, 28-14 = 14. which means, in 6 years Jan will be 28 & will will be 19 & 14 is half of 28. ✓



How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

T2

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w+3=B$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2(w+3)=J$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

$w+2(w+3)+w+3=41$

$w+2w+6+w+3$

$4w+9=41$ ✓

$4w=32$

$w=8$

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

1

T2

4. In how many years will Jan be twice as old as Will? 0 × years

0

Explain how you figured it out.

Jan is already twice as old as Ben who is 3 years older than Will so no matter what age any of them are at, Jan is always going to be older (more than twice as much) than Will. ×

0

5

How Old Are They?

This problem gives you the chance to:

- form expressions
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T3

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

Ben's age = w+3 ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

Jan's age = 2(w+3) ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

8
+3
11

11
×2
22

11
+22
33

33
+8
41

0

4. In how many years will Jan be twice as old as Will? 6 ✓ years

T3

1

Explain how you figured it out.

In 6 years will willbe 14. 14 times two is 28

22 plus 6 is 28. ✓

1

7

6

How Old Are They?

T4

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$x = w + 3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$x = w \cdot 2$ × 0

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

12 10 8
15 13 11
30 26 22
13
23
26

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

If will is 8 add 3 it equals 11

$11 \cdot 2 = 22$

$22 + 11 + 8 = 41$ 1

0

T4

4. In how many years will Jan be twice as old as Will? 6 ✓ years

1

Explain how you figured it out.

guess an age like 12 if its to low then guess another number like 14 and check

1

0

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

T5

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w+3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2(w+3)$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old 1

Jan is 22 ✓ years old

Show your work.

$2(w+3)+(w+3)+w=41$

$2w+6+w+3+w=41$ ✓ 1

$4w+9=41$

$\frac{4w}{4}=\frac{32}{4}$ $w=8$

4. In how many years will Jan be twice as old as Will? 6 years ✓ years

T5

Explain how you figured it out.

Ben	Jan
9	23
10	24
11	25
12	26
13	27
14	28

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S1

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

Bens age = w + 3 ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

✓
Jan's age = 2(w+3) 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

w = 8
Ben = 11
Jan = 22

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

1

41 = w + w+3 + 2w + 6 ✓

41 = 4w + 9 → $\frac{32}{4} = \frac{4w}{4}$ → w = 8

4. In how many years will Jan be twice as old as Will? 6 ✓ years S1

Explain how you figured it out.

First, I subtracted 8 from 22 to find out how old Jan was when Will was born. Then, I found out it was 14. Next I used guess and check method with Wills age. I said when he is 14, then Jan will be 28 (because he is 14 yrs. old and she is 14 years older than him). Last I subtracted 22 from 28 to see how many years until Jan is twice Wills age.

Jan was 14 when W was born ✓

W = 14

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S2

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w+3$ = ~~Ben's~~ age ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2w^{+3}$ = Jan's age × 0

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

$w=5$	10	9	8
8	13	12	11
16	26	24	22
	49	45	41

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

0

∧

4. In how many years will Jan be twice as old as Will? 16 ✓ years S2

1

Explain how you figured it out.

8 · 2 = 16

22 − 16 = 16 ✓

1

7

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S3

Will is w years old. = W

Ben is 3 years older. = B

1. Write an expression, in terms of w, for Ben's age.

$w = W + 3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$w = 2(W+3)$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

$8 + 3 = 11$

$11 \times 2 = 22$

$22 + 11 + 8 = 41$

^ 0

4. In how many years will Jan be twice as old as Will? 6 ✓ years

S3

1

Explain how you figured it out.

8 + 6 = 14 I guessed and checked.

22 + 6 = 28 ✓

14 x 2 = 28

1

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S4

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

Ben is $3+w$

$3+w$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2(3+w)$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

$2(3+w)+3+w+w=41$ 1

$6+2w+3+2w=41$ ✓

$9+4w=41$

$-9 \quad -9$

$\frac{4w}{4}=\frac{32}{4}$

$w=8$

$2(3+8)=$
$6+16=22$

4. In how many years will Jan be twice as old as Will? ___^___ years S4 0

Explain how you figured it out.

0

9 - 23
10 - 24
11 - 25
12 - 26
13 - 27
14 - 28
15 - 29
16 - 30
17 - 31
18 - 32
19 - 33
20 - 34
21 - 35
22 - 36
23 - 37
24 - 38
25 - 39

26 - 40
27 - 41
28 - 42
29 - 43
30 - 44
31 - 45
32 - 46
33 - 47
34 - 48
35 - 49
36 - 50
37 - 51
38 - 52
39 - 53
40 - 54

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S5

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w+3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2(w+3)$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

B: $w+3$ W: w J: $2(w+3$

$2w+6$

$4w+9=41$ ✓

$-9 \quad -9$

$\frac{4w}{4}=\frac{32}{4}$ $w=8$

$8+11=19$

$+22$

41 1

4. In how many years will Jan be twice as old as Will? 6 ✓ years S5

Explain how you figured it out.

$2(8+w) = 22+w$

$16 + 2w = 22 + w$

$-16 \quad -w \quad -16 \quad -w$

$w = 6$ ✓

1

1

7

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S6

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w+3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2(w+3)$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

use guess and check

Will:

$17.5 \div 2 = 8$

$w \div 2$

$2(w+3)$

$2(17.5+3)$

$2(20.5)$

41

Ben

$17.5+3 = 20.5 \div 2$

$(w+3) \div 2$

11

Jan

$41-11-8=22$

$(41-b)-w$

0

S6

4. In how many years will Jan be twice as old as Will? 6 years ago. ×

0

Explain how you figured it out.

Jan was twice as old as Will 6 years ago. Because Jan is twice as old as Ben who is older then Will. ×

0

(4)

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S7

Will is *w* years old.

Ben is 3 years older.

1. Write an expression, in terms of *w*, for Ben's age.

$b = w + 3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of *w*, for Jan's age.

$J = 2b$ × 0

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

1

Show your work.

4

9	23
10	24
11	25
12	26
13	27
14	28

0

S7

4. In how many years will Jan be twice as old as Will? 6 ✓ years

1

Explain how you figured it out.

added a year to each persons age until Will was half of Jans age. 1

working on previous page

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S8

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w = w + 3$

$B(w) = w + 3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$J = w + 3 + 2(w + 3)$

$J = w + 3(2)$

$J = w + 3(2)$ × 0

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

0

4. In how many years will Jan be twice as old as Will? 6 ✓ years

S8

1

Explain how you figured it out.

I did guess + check ^

0

7

4

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S9

Will is w years old. $w+3=A$

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$B=w+3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$J=2w+6$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years. $41=4w+12$ ✓

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

Show your work.

$41=4w+9$

$-9 \quad -9$

$32=4w$

41 1

4. In how many years will Jan be twice as old as Will? 8 × years

S9

Explain how you figured it out.

Well 22+8=30 then divide 30 by 2 you get will at age 15 & Jan @30 then you add 8 to Jan and get 30, the age she will be when she is twice as old.

How Old Are They?

This problem gives you the chance to:

- form expressions
- form and solve an equation to solve an age problem

S10

Will is w years old.

Ben is 3 years older.

1. Write an expression, in terms of w, for Ben's age.

$w+3$ ✓ 1

Jan is twice as old as Ben.

2. Write an expression, in terms of w, for Jan's age.

$2(w+3)$ ✓ 1

If you add together the ages of Will, Ben and Jan the total comes to 41 years.

3. Form an equation and solve it to work out how old Will, Ben, and Jan are.

$w + w+3 + 2w+6$

$4w+9=41$ ✓

$-9 \quad -9$

$\frac{4w}{4} = \frac{32}{4}$ $w=8$

Show your work.

Will is 8 ✓ years old 1

Ben is 11 ✓ years old

Jan is 22 ✓ years old 1

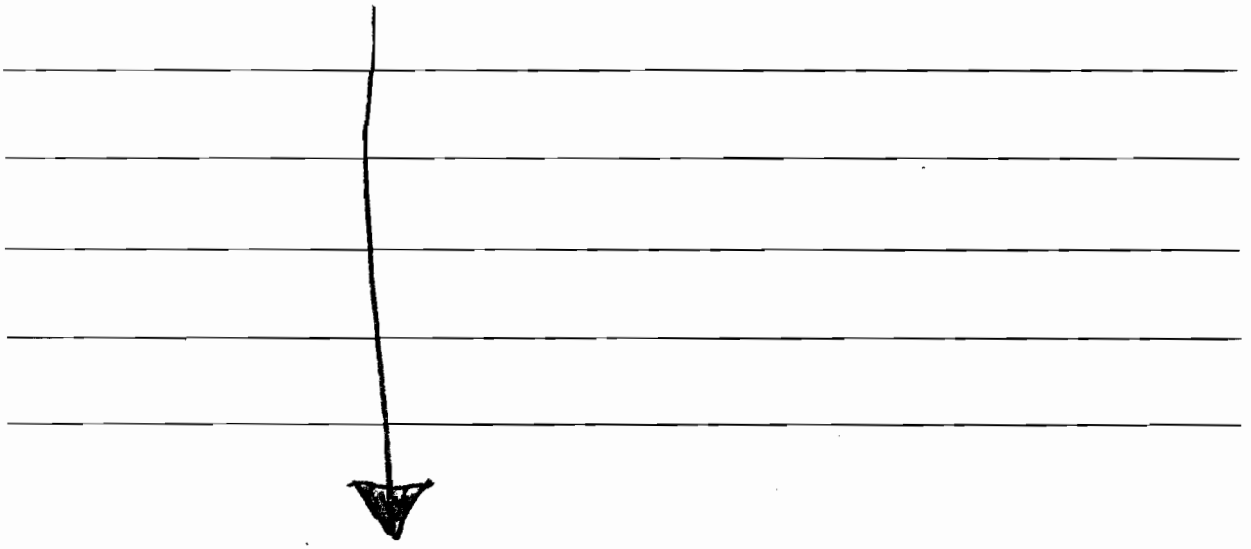
1

4. In how many years will Jan be twice as old as Will? 6 ✓ years

S10

1

Explain how you figured it out.



1