

Age & Gap Problems — Practice

CKSTEM Math Problem Solving · Grades 2–8

1 THE GAP NEVER CLOSES

A mom is 34 and her son is 8. What is the difference in their ages now? And in 10 years, when the mom is 44 and the son is 18, what is the difference then?

WORK IT OUT HERE

2 THE GAP NEVER CLOSES

A grandpa is 70 and his grandchild is 7. How much older is grandpa right now? When the grandchild grows up to be 27, how much older will grandpa be?

WORK IT OUT HERE

3 SLIDE THE WHOLE TIMELINE

Tom is 3 and Mia is 11. How old will each of them be in 5 years?

WORK IT OUT HERE

4 SLIDE THE WHOLE TIMELINE

Kim is 4 and Sam is 13. How old will each be in 7 years, and how many years apart will they be then?

WORK IT OUT HERE

5 MEET IN THE MIDDLE

Two friends' ages add up to 24. One friend is 6 years older than the other. How old is each friend?

WORK IT OUT HERE

6 MEET IN THE MIDDLE

Two siblings' ages add up to 40. One is 8 years older than the other. How old is each sibling?

WORK IT OUT HERE

7 THE GAP IN PARTS

Ana is 3 times as old as Ben, and Ana is 10 years older than Ben. How old is each of them?

WORK IT OUT HERE

8 THE GAP IN PARTS

A mango tree is 5 times as old as a young sapling, and the tree is 24 years older. How old is each one?

WORK IT OUT HERE

9 TWO EQUAL HOPS

You are 8 years old. Your older cousin says, "When you grow up to be as old as I am now, I will be 60." How old is your cousin now?

WORK IT OUT HERE

10 TWO EQUAL HOPS

You are 12 years old. Your aunt says, "When you are as old as I am right now, I will be 54." How old is your aunt now?

WORK IT OUT HERE

11 WHEN DOES THE MULTIPLE HIT?

A dad is 36 and his kid is 6. In how many years will the dad be exactly 3 times as old as the kid?

WORK IT OUT HERE

12 WHEN DOES THE MULTIPLE HIT?

A teacher is 45 years old and her student is 5. In how many years will the teacher be exactly 5 times as old as the student?

WORK IT OUT HERE

13 AGE DETECTIVE

A family of 4 has ages adding up to 75 now. But 3 years ago, the ages of everyone who was alive added up to only 65. How old is the youngest baby?

WORK IT OUT HERE

14 AGE DETECTIVE

A family of 5 has ages adding up to 101 now. But 4 years ago, the ages of everyone who was alive added up to only 83. How old is the youngest toddler?

WORK IT OUT HERE

15 TWO SNAPSHOTS, ONE GAP

Right now an aunt is 4 times as old as her nephew. In 6 years, she will be only 2 times as old as him. How old are they now?

WORK IT OUT HERE

16 TWO SNAPSHOTS, ONE GAP

Right now an uncle is 6 times as old as his niece. In 8 years, he will be only 4 times as old as her. How old are they now?

WORK IT OUT HERE

17 DIGITS & AGES

Two people's ages use the same two digits, just flipped (like 21 and 12). The ages add up to 110, and one is 54 years older. What are the two ages?

WORK IT OUT HERE

18 DIGITS & AGES

Two people's ages use the same two digits, just flipped. The two ages add up to 99, and one is 45 years older. What are the two ages?

WORK IT OUT HERE

19 AVERAGE AGE

A book club of 8 members has an average age of 32. In 4 years, what will the club's average age be — and what is the total of all their ages then?

WORK IT OUT HERE

20 AVERAGE AGE

A class of 6 children has an average age of 9. A new student who is 16 joins. What is the new average age?

WORK IT OUT HERE

Answer Key

Each answer comes with a hint that names the move. The tag says which video to rewatch if you are stuck.

1. 26 years now — and still 26 in 10 years.

— *The Gap Never Closes*

Subtract the two ages to find the gap; because both grow the same amount, that gap is still the answer in 10 years.

2. 63 years now — and still 63 (grandpa will be 90). — *The Gap Never Closes*

Find the gap by subtracting the two ages — it doesn't change when the grandchild reaches 27.

3. Tom 8, Mia 16 (the gap stays 8). — *Slide the Whole Timeline*

Add the same number of years to each age; the gap stays put as the whole timeline slides.

4. Kim 11, Sam 20 — still 9 years apart. — *Slide the Whole Timeline*

Slide both ages up by 7 — the years between them never change.

5. 9 and 15. — *Meet in the Middle*

Halve the sum to land on the middle age, then step half the gap up and down to each side.

6. 16 and 24. — *Meet in the Middle*

The middle is half the sum; move half the gap above it for the older and below for the younger.

7. Ben 5, Ana 15. — *The Gap in Parts*

"3 times as old" makes the younger 1 part and the older 3 parts, so the gap spans 2 parts — split the gap into equal parts.

8. Sapling 6, tree 30. — *The Gap in Parts*

"5 times as old" means the gap is 4 equal parts; divide the gap into those parts to size the sapling.

9. 34 years old. — *Two Equal Hops*

From your age up to 60 is two equal age-gaps; halve that span for one gap, then add it to your age for the cousin.

10. 33 years old. — *Two Equal Hops*

The jump from 12 to 54 covers two gaps — take half of it for one gap and add to 12 for the aunt.

11. 9 years. — *When Does the Multiple Hit?*

The gap (36 – 6) is frozen; "3× as old" makes that gap equal 2 of the kid's parts, so find the kid's age then and count the years to it.

12. 5 years (teacher 50, student 10). — *When Does the Multiple Hit?*

The gap (45 – 5) is frozen forever; "5 times as old" makes that gap equal 4 of the student's parts at the target moment — size one part of the student, then count the years up to it.

13. 1 year old (not born yet 3 years ago). — *Age Detective*

If all four were alive, the total should drop by 4×3 ; it dropped less, and the shortfall is the baby who wasn't born yet.

14. 2 years old (not born yet 4 years ago). — *Age Detective*

Expected drop with all five alive is 5×4 ; the real drop is smaller, and that gap reveals the toddler's age.

15. Nephew 3, aunt 12. — *Two Snapshots, One Gap*

The gap never changes: "4×" now makes it 3 of the nephew's parts, and "2×" later makes it his age then — set the two equal.

16. Niece 12, uncle 72. — *Two Snapshots, One Gap*

The gap never moves: "6×" now makes it 5 of the niece's parts, and "4×" in 8 years makes it 3 of her parts then — set the two pictures of the same gap equal to find her age.

17. 82 and 28. — *Digits & Ages*

Reversed ages: divide the sum by 11 for the two digits' total and the gap by 9 for their difference, then find the digits.

18. 72 and 27. — *Digits & Ages*

Same digits flipped: $\text{sum} \div 11$ gives the digits' total, $\text{gap} \div 9$ gives their difference — solve for the two digits.

19. Average 36; total 288. — *Average Age*

When everyone ages the same number of years the average rises by exactly that many; turn the new average into a total with $\text{total} = \text{average} \times \text{count}$.

20. 10 years. — *Average Age*

Turn the average into a total ($\text{count} \times \text{average}$), add the new student's age, then divide by the new count.