Chicken & Rabbit Problems — Practice

CKSTEM Math Problem Solving · Grades 4–7

1 PRETEND METHOD

A petting zoo has chickens and rabbits. Altogether there are 6 animals, and they have 16 legs in total. How many of each animal are there?

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2 PRETEND METHOD

On a small farm the goats and ducks together have 9 heads and 26 legs. (Ducks have 2 legs, goats have 4.) How many ducks and how many goats are there?

WORK IT OUT HERE

3 PRETEND METHOD

A wildlife shelter is caring for spiders and beetles. There are 20 creatures in all, with 144 legs altogether. (Beetles have 6 legs, spiders have 8.) How many beetles and how many spiders are there?

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4 PRETEND METHOD (REAPPLIED)

A shop has bicycles and tricycles on display. There are 10 of them in total, with 23 wheels altogether. How many bicycles and how many tricycles are there?

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5 PRETEND METHOD (REAPPLIED)

At a community repair day there are bicycles and tricycles. There are 14 cycles in all, with 33 wheels altogether. How many bicycles and how many tricycles are there?

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6 PRETEND METHOD (REAPPLIED)

A donation drive collects bicycles and tricycles. There are 20 cycles in total, with 47 wheels altogether. How many bicycles and how many tricycles are there?

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7 PRETEND METHOD (LARGER GAP)

Kids glue sticks into triangles (3 sticks each) and hexagons (6 sticks each). They make 8 shapes in total using 33 sticks. How many triangles and how many hexagons did they make?

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8 PRETEND METHOD (LARGER GAP)

At a toothpick fair, kids build squares (4 toothpicks each) and octagons (8 toothpicks each). There are 10 shapes in all, using 56 toothpicks. How many squares and how many octagons are there?

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9 PRETEND METHOD (LARGER GAP)

A class folds pentagons (5 sides each) and decagons (10 sides each) out of straws. They make 20 shapes in total, using 130 straws. How many pentagons and how many decagons are there?

WORK IT OUT HERE

10 TRIM, THEN PRETEND

A craft club strings small bracelets (2 beads each) and large bracelets (5 beads each). There are 4 more large bracelets than small ones, and 41 beads are used in all. How many small bracelets and how many large bracelets are there?

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11 TRIM, THEN PRETEND

A workshop makes short keychains (3 links each) and long keychains (8 links each). There are 5 more long keychains than short ones, and 84 links are used altogether. How many short keychains and how many long keychains are there?

WORK IT OUT HERE

12 TRIM, THEN PRETEND

An art class threads thin garlands (4 beads each) and thick garlands (9 beads each). There are 7 more thick garlands than thin ones, and 141 beads are used in total. How many thin garlands and how many thick garlands are there?

WORK IT OUT HERE

13 RATIO BLOCK

A volunteer fills regular care boxes (3 items each) and big care boxes (5 items each). She packs twice as many big boxes as regular ones, and 52 items in all. How many regular boxes and how many big boxes did she pack?

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14 RATIO BLOCK

A food drive uses small bags (2 cans each) and large bags (5 cans each). There are three times as many large bags as small ones, and 51 cans altogether. How many small bags and how many large bags are there?

WORK IT OUT HERE

15 RATIO BLOCK

A bake sale boxes regular trays (4 muffins each) and deluxe trays (6 muffins each). There are twice as many deluxe trays as regular ones, and 80 muffins in total. How many regular trays and how many deluxe trays are there?

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16 SIGNED PRETEND

On a quiz, each correct answer earns 4 points and each wrong answer loses 1 point. Jay answered all 20 questions and scored 35 points. How many did Jay get right and how many wrong?

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17 SIGNED PRETEND

In a game show, each right answer earns 6 points and each wrong answer loses 3 points. A player answered all 25 questions and scored 78 points. How many did the player get right and how many wrong?

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18 SIGNED PRETEND

On a contest, each correct answer earns 5 points and each wrong answer loses 2 points. A student answered all 40 questions and scored 95 points. How many did the student get right and how many wrong?

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Answer Key

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

1. 4 chickens and 2 rabbits. — *Pretend Method*

Pretend all 6 animals are chickens — that is only 12 legs, so each rabbit you swap in adds 2 more legs; the extra legs tell you the rabbits.

2. 5 ducks and 4 goats. — *Pretend Method*

Pretend all 9 animals are ducks (2 legs each); every goat you swap in adds 2 legs, so divide the missing legs by 2 to count the goats.

3. 8 beetles and 12 spiders. — *Pretend Method*

Pretend all 20 creatures are spiders (8 legs each); each beetle you swap in removes 2 legs, so the legs you are over by tell you the beetles.

4. 7 bicycles and 3 tricycles. — *Pretend Method (reapplied)*

Pretend all 10 are bicycles (2 wheels each, so 20 wheels); each tricycle you swap in adds just 1 wheel, so the extra wheels count the tricycles.

5. 9 bicycles and 5 tricycles. — *Pretend Method (reapplied)*

Pretend all 14 cycles are bicycles (2 wheels each, so 28 wheels); each tricycle you swap in adds just 1 wheel, so the extra wheels count the tricycles.

6. 13 bicycles and 7 tricycles. — *Pretend Method (reapplied)*

Pretend all 20 cycles are bicycles (2 wheels each, so 40 wheels); each tricycle you swap in adds just 1 wheel, so the extra wheels tell you the tricycles.

7. 5 triangles and 3 hexagons. — *Pretend Method (larger gap)*

Pretend all 8 shapes are triangles (3 sticks each, so 24 sticks); each hexagon you swap in adds 3 sticks, so divide the missing sticks by 3 to count the hexagons.

8. 6 squares and 4 octagons. — *Pretend Method (larger gap)*

Pretend all 10 shapes are octagons (8 toothpicks each, so 80); each square you swap in removes 4 toothpicks, so the toothpicks you are over by tell you the squares.

9. 14 pentagons and 6 decagons. — *Pretend Method (larger gap)*

Pretend all 20 shapes are decagons (10 straws each, so 200); each pentagon you swap in removes 5 straws, so divide the straws you are over by by 5 to count the pentagons.

10. 3 small bracelets and 7 large bracelets. — *Trim, Then Pretend*

Set aside the 4 extra large bracelets first (4 × 5 = 20 beads) and subtract them; the 21 beads left split into matched pairs costing 2 + 5 = 7 each.

11. 4 short keychains and 9 long keychains. — *Trim, Then Pretend*

Trim away the 5 extra long keychains first (5 × 8 = 40 links) and subtract them; the links left form matched pairs costing 3 + 8 = 11 each.

12. 6 thin garlands and 13 thick garlands. — *Trim, Then Pretend*

Set aside the 7 extra thick garlands first (7 × 9 = 63 beads) and subtract them; the beads left split into matched pairs costing 4 + 9 = 13 each.

13. 4 regular boxes and 8 big boxes. — *Ratio Block*

Build one block of 1 regular box plus 2 big boxes (the matching set); it holds 3 + 5 + 5 = 13 items, so divide the total by 13 to count the blocks.

14. 3 small bags and 9 large bags. — *Ratio Block*

Build one block of 1 small bag plus 3 large bags; it holds 2 + 5 + 5 + 5 = 17 cans, so divide the total by 17 to find the number of blocks.

15. 5 regular trays and 10 deluxe trays. — *Ratio Block*

Build one block of 1 regular tray plus 2 deluxe trays; it holds 4 + 6 + 6 = 16 muffins, so divide the total by 16 to count the blocks.

16. 11 correct and 9 wrong. — *Signed Pretend*

Pretend Jay got all 20 wrong (a score of −20); each answer you switch to correct is worth 4 + 1 = 5 points, so divide the gap from −20 up to 35 by 5.

17. 17 correct and 8 wrong. — *Signed Pretend*

Pretend all 25 were wrong (a score of −75); each switch to correct is worth 6 + 3 = 9 points, so divide the gap from −75 up to 78 by 9.

18. 25 correct and 15 wrong. — *Signed Pretend*

Pretend all 40 were wrong (a score of −80); each switch to correct is worth 5 + 2 = 7 points, so divide the gap from −80 up to 95 by 7.