Grade 4 Geometry Workbook

3 lessons · printable · answer key at the back

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Name _____ Date _____

Contents

Types of Angle

WORKED EXAMPLE

acute right **obtuse**

1. Acute, right, or obtuse

Write whether each angle is acute, right, or obtuse.

1

acute right obtuse

2

acute right obtuse

3

acute right obtuse

4

acute right obtuse

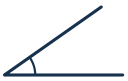
5

acute right obtuse

6

acute right obtuse

7



acute right obtuse

8

acute right obtuse

9

acute right obtuse

2. Add and subtract fractions

Add or subtract. Write each answer in simplest form.

10 $\frac{1}{6} + \frac{2}{6} = \_\_$

11 $\frac{4}{6} + \frac{3}{6} = \_\_$

12 $\frac{4}{5} + \frac{3}{5} = \_\_$

13 $\frac{4}{6} - \frac{1}{6} = \_\_$

14 $\frac{4}{7} + \frac{1}{7} = \_\_$

15 $\frac{4}{7} + \frac{5}{7} = \_\_$

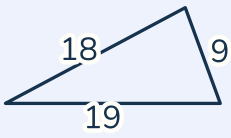
16 $\frac{1}{2} + \frac{1}{2} = \_\_$

17 $\frac{2}{5} + \frac{3}{5} = \_\_$

18 $\frac{3}{5} - \frac{1}{5} = \_\_$

Types of Triangle

WORKED EXAMPLE

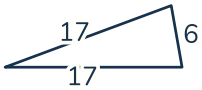


equilateral | isosceles | **scalene**

3. Classify triangles by angles or sides

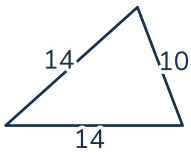
Name each triangle.

1



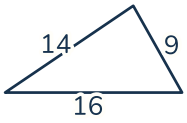
equilateral | isosceles | scalene

2



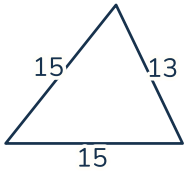
equilateral | isosceles | scalene

3



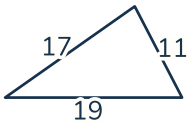
equilateral | isosceles | scalene

4



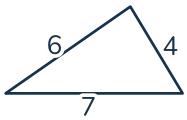
equilateral | isosceles | scalene

5



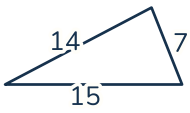
equilateral | isosceles | scalene

6



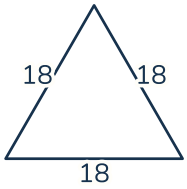
equilateral | isosceles | scalene

7



equilateral | isosceles | scalene

8



equilateral | isosceles | scalene

4. Adding mixed numbers

Add. Write each answer as a mixed number in simplest form.

9 $2\frac{1}{7} + 2\frac{2}{7} = \_\_\_$

10 $3\frac{1}{8} + 1\frac{7}{8} = \_\_\_$

11 $4\frac{1}{5} + 4\frac{3}{5} = \_\_\_$

12 $5\frac{5}{8} + 5\frac{1}{8} = \_\_\_$

13 $3\frac{6}{7} + 1\frac{4}{7} = \_\_\_$

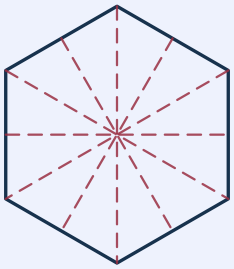
14 $5\frac{1}{6} + 1\frac{1}{6} = \_\_\_$

15 $5\frac{3}{5} + 2\frac{3}{5} = \_\_\_$

16 $1\frac{1}{5} + 3\frac{1}{5} = \_\_\_$

Lines of Symmetry

WORKED EXAMPLE

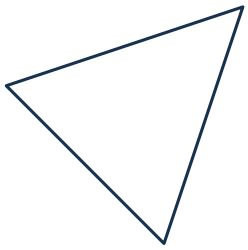


6 lines

5. Lines of symmetry

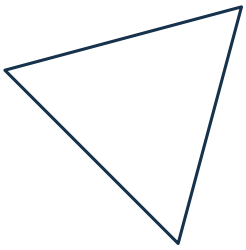
Write how many lines of symmetry each shape has.

1



_____ lines

2

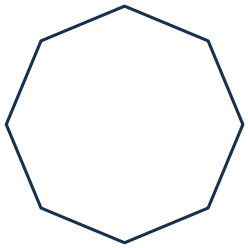


_____ lines

3

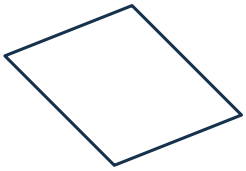
_____ lines

4



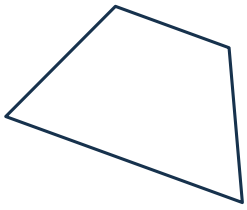
_____ lines

5



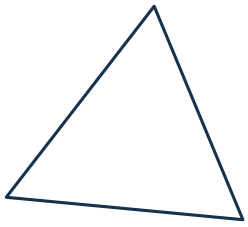
_____ lines

6



_____ lines

7

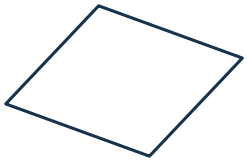


_____ lines

8

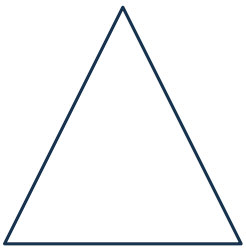
_____ lines

9



_____ lines

10



_____ lines

6. What the digit is worth

Write the value of the highlighted digit.

11 37.32 → _____

12 9.51 → _____

13 75.67 → _____

14 48.18 → _____

15 81.26 → _____

16 60.34 → _____

17 98.53 → _____

18 23.40 → _____

19 80.95 → _____

20 58.71 → _____

Answer Key

Types of Angle

Acute, right, or obtuse

1. 15°: acute
2. 155°: obtuse
3. 120°: obtuse
4. 30°: acute
5. 160°: obtuse
6. 50°: acute
7. 35°: acute
8. 165°: obtuse
9. 75°: acute

Add and subtract fractions

10. 1/6 + 2/6 = 1/2
11. 4/6 + 3/6 = 7/6
12. 4/5 + 3/5 = 7/5
13. 4/6 − 1/6 = 1/2
14. 4/7 + 1/7 = 5/7
15. 4/7 + 5/7 = 9/7
16. 1/2 + 1/2 = 1
17. 2/5 + 3/5 = 1
18. 3/5 − 1/5 = 2/5

Types of Triangle

Classify triangles by angles or sides

1. 6, 17, 17: isosceles
2. 10, 14, 14: isosceles
3. 9, 14, 16: scalene
4. 13, 15, 15: isosceles
5. 11, 17, 19: scalene
6. 4, 6, 7: scalene
7. 7, 14, 15: scalene
8. 18, 18, 18: equilateral

Adding mixed numbers

9. 2 1/7 + 2 2/7 = 4 3/7
10. 3 1/8 + 1 7/8 = 5
11. 4 1/5 + 4 3/5 = 8 4/5
12. 5 5/8 + 5 1/8 = 10 3/4
13. 3 6/7 + 1 4/7 = 5 3/7
14. 5 1/6 + 1 1/6 = 6 1/3
15. 5 3/5 + 2 3/5 = 8 1/5
16. 1 1/5 + 3 1/5 = 4 2/5

Lines of Symmetry

Lines of symmetry

1. isosceles triangle turned 45°: 1
2. equilateral triangle turned 45°: 3
3. parallelogram: 0
4. regular octagon turned 45°: 8
5. parallelogram turned 45°: 0
6. isosceles trapezoid turned 20°: 1
7. scalene triangle turned 20°: 0
8. rectangle: 2
9. parallelogram turned 20°: 0
10. isosceles triangle: 1

What the digit is worth

11. 37.32 (2) → 0.02
12. 9.51 (5) → 0.5
13. 75.67 (6) → 0.6
14. 48.18 (1) → 0.1
15. 81.26 (6) → 0.06
16. 60.34 (3) → 0.3
17. 98.53 (5) → 0.5
18. 23.40 (4) → 0.4
19. 80.95 (5) → 0.05
20. 58.71 (7) → 0.7

Solutions (1 of 7)

Types of Angle

Acute, right, or obtuse

1.

acute | right | obtuse

15° vs **90°**

15 **<** 90

15° → **acute**

Do not judge it by how big it looks — a long pair of arms makes an angle look wider than it is, and the arms are not the angle. Compare it to a RIGHT ANGLE instead; that is the one you can picture exactly.

15 is less than 90.

Smaller than a right angle is ACUTE. (A useful check: it fits inside the corner of a page.)

2.

acute | right | obtuse

155° vs **90°**

155 **>** 90

155° → **obtuse**

Do not judge it by how big it looks — a long pair of arms makes an angle look wider than it is, and the arms are not the angle. Compare it to a RIGHT ANGLE instead; that is the one you can picture exactly.

155 is more than 90.

Bigger than a right angle is OBTUSE. (It cannot fit inside the corner of a page — but it is still less than a straight line, which would be 180.)

Solutions (2 of 7)

Types of Angle (continued)

Add and subtract fractions

10. $\frac{1}{6} + \frac{2}{6} = \text{—}$

$$\frac{1}{6} + \frac{2}{6} = \frac{3}{6}$$

$$3 \div 3 = \mathbf{1}$$

$$6 \div 3 = \mathbf{2}$$

$$\frac{3}{6} = \frac{\mathbf{1}}{\mathbf{2}}$$

Both are sixths, so the pieces are already the same size. That is what lets them be counted together.

1 of them plus 2 of them is 3 of them: 3/6. The bottom does not change — the pieces did not change size.

3/6 can be written in bigger pieces. 3 goes into both, so take it off both: 3/6 = 1/2.

11. $\frac{4}{6} + \frac{3}{6} = \text{—}$

$$\frac{4}{6} + \frac{3}{6}$$

$$\frac{4}{6} + \frac{3}{6} = \frac{\mathbf{7}}{\mathbf{6}}$$

Both are sixths, so the pieces are already the same size. That is what lets them be counted together.

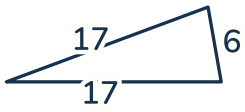
4 of them plus 3 of them is 7 of them: 7/6. The bottom does not change — the pieces did not change size.

Solutions (3 of 7)

Types of Triangle

Classify triangles by angles or sides

1.



equilateral | isosceles | scalene

sides: 6 cm 17 cm 17 cm

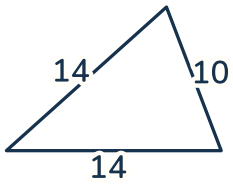
isosceles

Every triangle has TWO names — one for its angles and one for its sides — and it has both at once. This question is asking for the SIDE name, so look only at the side lengths.

Count how many are the SAME, not how long they are: two match and one does not.

Exactly two equal is ISOSCELES. (Equilateral counts as isosceles too, but when all three match the question wants the more exact name.)

2.



equilateral | isosceles | scalene

sides: 10 cm 14 cm 14 cm

isosceles

Every triangle has TWO names — one for its angles and one for its sides — and it has both at once. This question is asking for the SIDE name, so look only at the side lengths.

Count how many are the SAME, not how long they are: two match and one does not.

Exactly two equal is ISOSCELES. (Equilateral counts as isosceles too, but when all three match the question wants the more exact name.)

Solutions (4 of 7)

Types of Triangle (continued)

Adding mixed numbers

9. $2\frac{1}{7} + 2\frac{2}{7} = \_\_\_$

$$\frac{1}{7} + \frac{2}{7} = \frac{3}{7}$$

$$2 + 2 = 4$$

$$= \mathbf{4}\ \mathbf{\frac{3}{7}}$$

A mixed number is a whole and a fraction stuck together. Deal with them separately — wholes with wholes, sevenths with sevenths.

The fractions go together first: 1/7 + 2/7 = 3/7.

Then the wholes: 2 + 2 = 4.

So the answer is 4 3/7.

10. $3\frac{1}{8} + 1\frac{7}{8} = \_\_\_$

$$\frac{1}{8} + \frac{7}{8} = \frac{8}{8}$$

$$3 + 1 = 4$$

$$= \mathbf{5}$$

A mixed number is a whole and a fraction stuck together. Deal with them separately — wholes with wholes, eighths with eighths.

The fractions go together first: 1/8 + 7/8 = 8/8.

Then the wholes: 3 + 1 = 4.

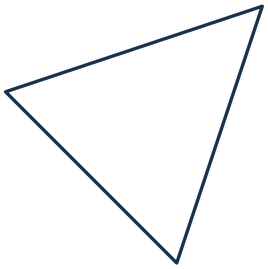
But 8/8 is exactly one whole — 8/8 is 1 — so nothing is left over as a fraction: 4 + 1 = 5.

So the answer is 5.

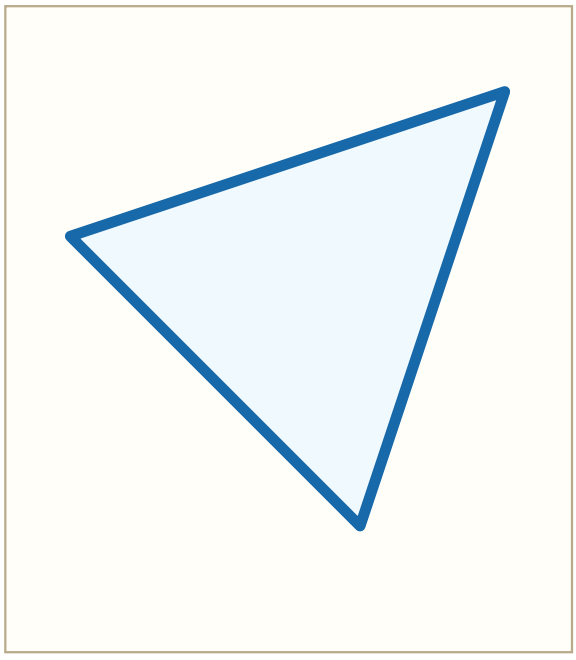
Solutions (5 of 7)

Lines of Symmetry

Lines of symmetry

1. 

___ lines



A line of symmetry is a FOLD: crease along it and the two halves must land exactly on each other. Not "looks balanced" — land on each other.

Here is one of them. Crease along that line and the part on the left lands exactly on the part on the right — that is what makes it count.

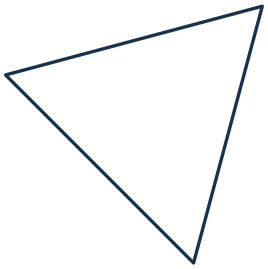
And that is the only one: an isosceles triangle has 1 line of symmetry.

Solutions (6 of 7)

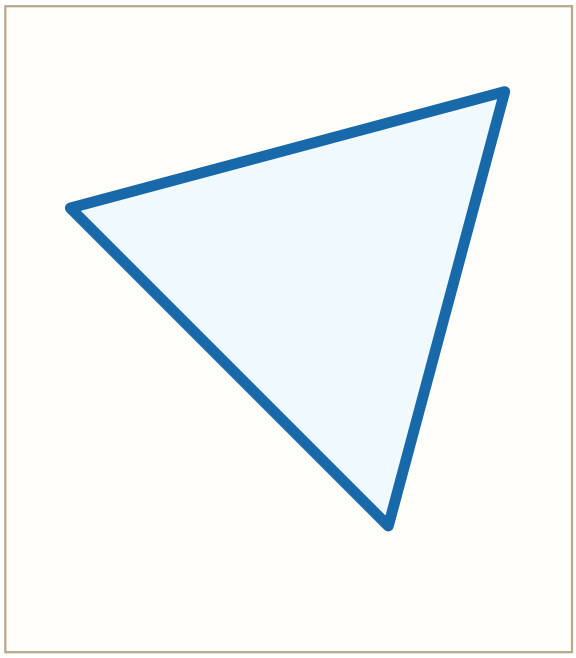
Lines of Symmetry (continued)

Lines of symmetry (continued)

2.



___ lines



A line of symmetry is a FOLD: crease along it and the two halves must land exactly on each other. Not "looks balanced" — land on each other.

Here is one of them. Crease along that line and the part on the left lands exactly on the part on the right — that is what makes it count.

Every other crease that works is drawn now — 3 altogether for an equilateral triangle.

What the digit is worth

11. **37.3<u>2</u>** → _____

number: 3 7 . 3 **2**

2 → **0.02**

The places do not mirror each other around the point — there is no "oneths". Going right they are tenths, hundredths, thousandths: each one ten times SMALLER than the last.

Count in from the point: the 2 sits in the hundredths.

Its VALUE is what it is worth there, not the digit itself: 2 in the hundredths is 0.02. That gap between "2" and "0.02" is the whole of this topic.

Solutions (7 of 7)

Lines of Symmetry (continued)

What the digit is worth (continued)

12. 9.**5**1 → ____

number: 9 . **5** 1

5 → **0.5**

The places do not mirror each other around the point — there is no "oneths". Going right they are tenths, hundredths, thousandths: each one ten times SMALLER than the last.

Count in from the point: the 5 sits in the tenths.

Its VALUE is what it is worth there, not the digit itself: 5 in the tenths is 0.5. That gap between "5" and "0.5" is the whole of this topic.