

MATH 7 Accelerated: Week of May 18

- Go through the slides (notes) and work through the examples on a separate piece of paper.
 - Do the given practice problems (again, on a separate piece of paper).
 - Check your answers with the key given (last slide).
 - Take a photo or scan in your work and submit it in Google Classroom.
- If you have questions or would like feedback on your work, add that as a comment with your submitted work.
- The other option for turn in is to send it in on Monday when the new packet is available.
 - Zoom help session invites will be sent to your school email address.

Day 1: Slides 2-6
Day 3: Slides 12-17

Day 2: Slides 7-11
Answers on Slide 18

Day 1

Target: L13: Special Quadrilaterals

Find measures of angles in parallelograms and isosceles trapezoids.

Vocabulary

Parallelogram: Quadrilateral with both pairs of opposite sides parallel.

- Opposite sides are congruent.
- Opposite angles are congruent.
- Consecutive angles are supplementary.

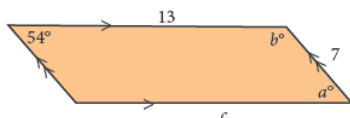
Trapezoid: Quadrilateral with exactly one pair of parallel sides.

Isosceles Trapezoid:

Trapezoid with two congruent legs.

- The legs are congruent.
- Each pair of base angles is congruent.
- A top base angle and a bottom base angle are supplementary.

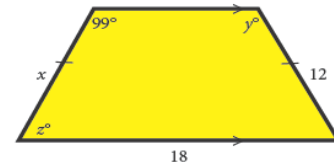
Example 1



Find the values of a , b , and c .

- ▶ The variable a is opposite the angle which measures 54° , so $a = 54^\circ$.
- ▶ The variable b is a consecutive angle with 54° .
- ▶ This makes the angles supplementary. $b + 54 = 180$
- ▶ Subtract 54 from both sides of the equation.
$$\begin{array}{r} -54 \quad | \quad -54 \\ b = 126^\circ \end{array}$$
- ▶ The variable c is opposite the side which measures 13 units, so $c = 13$.

Example 2



Find the values of x , y and z .

- ▶ The variable x is congruent to the opposite leg, so $x = 12$.
- ▶ The variable y forms a pair of base angles with 99° , so $y = 99^\circ$.
- ▶ The angle represented by z is the supplement of 99° because the angles form a pair of one top and one bottom base angle.

Write an equation. $z + 99 = 180$
Subtract 99 from each side.
$$\begin{array}{r} -99 \quad | \quad -99 \\ z = 81^\circ \end{array}$$

L13 Practice Problems:

Find the values of x and y in each figure.

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L13 Practice Problems:

Find the values of x and y in each figure.

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- Draw an isosceles trapezoid. Write angle measures in the figure so that base angles are equal and pairs of top and bottom base angles are supplementary.
- Find the values of a , b , c and d in the figure at the right.

END DAY 1

Day 2

L14: Perfect Squares

Target: Recognize and find the values of perfect squares.

Vocabulary

Perfect Square: The value of an integer to the second power.

Square Root: One of the two equal factors of a number.

Example 1

Find the value of each square root.

$$\sqrt{9}$$

$$3 \cdot 3 = 9$$

$$\text{So, } \sqrt{9} = 3$$

$$\sqrt{121}$$

$$11 \cdot 11 = 121$$

$$\text{So, } \sqrt{121} = 11$$

Example 2

Solve each equation.

$$x^2 = 9$$

$$\sqrt{x^2} = \sqrt{9}$$

$$x = \pm 3$$

Because $3 \cdot 3 = 9$
And $(-3)(-3) = 9$

Read the answer as "plus or minus 3"

$$x^2 - 21 = 28$$

$$\frac{\quad + 21 \quad + 21}{x^2 = 49}$$

$$\sqrt{x^2} = \sqrt{49}$$

$$x = \pm 7$$

Because $7 \cdot 7 = 49$
And $(-7)(-7) = 49$

$$3y^2 = 300$$

$$\frac{3y^2}{3} = \frac{300}{3}$$

$$y^2 = 100$$

$$\sqrt{y^2} = \sqrt{100}$$

$$y = \pm 10$$

Because $10 \cdot 10 = 100$
And $(-10)(-10) = 100$

L14 Practice Problems:

Find each value.

1. 2^2

2. 6^2

3. 11^2

4. $\sqrt{25}$

5. $\sqrt{1}$

6. $\sqrt{64}$

7. $\sqrt{100}$

8. $\sqrt{16}$

9. $\sqrt{144}$

10. Mountain View Middle School students work on square desktops. The area of the square desk surface is 4 square feet. What is the length of each side of the desktop?

11. A square has an area of 81 square meters.
a. Find the length of one side of the square.
b. Find the perimeter of the square.

L14 Practice Problems:

12. The area of a circle is 121π square units. The formula for the area of a circle is $A = \pi r^2$. What is the radius of the circle?

Solve each equation. Check your answers.

13. $x^2 - 11 = 25$

14. $6a^2 = 24$

15. $9 + b^2 = 58$

16. $-3y^2 = -75$

17. $2x^2 - 3 = 15$

18. $412 = 4m^2 + 12$

END DAY 2**Day 3**

L15: Estimating Square Roots

Target: Estimate the values of square roots.

Vocabulary

Rational Number: A number that can be written as a fraction with integers in the numerator and denominator.

Irrational Numbers: Numbers that cannot be expressed as a fraction with integers in the numerator and denominator.

Example 1a

Determine the two positive integers that each root lies between.

$$\sqrt{35}$$

- 35 is between the perfect squares 25 and 36.

$$\sqrt{25} = 5 \text{ and } \sqrt{36} = 6$$

$\sqrt{35}$ is between 5 and 6.

Example 1b

Determine the two positive integers that each root lies between.

$$\sqrt{83}$$

- 83 is between the perfect squares 81 and 100.

$$\sqrt{81} = 9 \text{ and } \sqrt{100} = 10$$

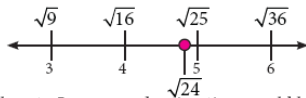
$\sqrt{83}$ is between 9 and 10.

Example 2

Use a number line to approximate the value of $\sqrt{24}$ to the nearest tenth. Use a calculator to find its value to the nearest tenth.

- 24 falls between perfect squares 16 and 25.

$\sqrt{24}$ is between 4 and 5.



$\sqrt{24}$ is very close to 5, so a good estimation would be $\sqrt{24} \approx 4.9$

Calculator: $4.898979... \approx 4.9$

L15 Practice Problems:

Determine the two positive integers each square root falls between. No calculators.

1. $\sqrt{28}$ 2. $\sqrt{3}$ 3. $\sqrt{59}$

4. $\sqrt{15}$ 5. $\sqrt{72}$ 6. $\sqrt{140}$

Approximate each square root to the nearest tenth. No calculators!

7. $\sqrt{8}$ 8. $\sqrt{19}$ 9. $\sqrt{30}$

10. $\sqrt{52}$ 11. $\sqrt{79}$ 12. $\sqrt{114}$

Use a calculator to approximate each square root. Round to the nearest tenth.

13. $\sqrt{23}$

14. $\sqrt{85}$

16. $\sqrt{38}$

15. $\sqrt{256}$

17. $\sqrt{471}$

18. $\sqrt{3}$

L15 Practice Problems:

19. A square table garden has an area of 215 square feet.
 a. What is the approximate length of one side of the garden? Round to the nearest tenth.
 b. Approximately how many yards of fence will it take to enclose the garden?

Solve for x . Round answers to the nearest tenth.

20. $x^2 + 9 = 28$ 21. $50 = 5a^2$ 22. $2y^2 - 12 = 48$

23. $500 = -15 + 5x^2$ 24. $10 - 3b^2 = -11$ 25. $2x^2 + 4x^2 = 30$

END DAY 3

ANSWER PAGE

Day 3:
 2. 1 and 2
 1. 5 and 6
 3. 7 and 8
 4. 3 and 4
 6. 11 and 12
 5. 8 and 9
 7. 2 and 8
 8. 4 and 4
 9. 5 and 5
 10. 7 and 2
 11. 8 and 9
 12. 10 and 7
 13. 4 and 8
 14. 9 and 2
 15. 16 and 16
 16. 2 and 2
 17. 21 and 7
 18. 1 and 7
 19. a. 14.7 feet
 b. 19.6 yards

Day 2:
 1. 4 and 2
 2. 36 and 1
 3. 121 and 4
 4. 5 and 5
 5. 1 and 1
 6. 8 and 8
 7. 10 and 4
 8. 4 and 4
 9. 12 and 10.2 feet
 10. 9 meters
 11. a. 9 meters
 b. 36 meters
 12. 11 units
 13. 6 and 6
 14. 2 and 2
 15. 7 and 7
 16. 5 and 5
 17. 3 and 3
 18. 10 and 10
 19. 9.5

Day 1:
 1. $x = 102, y = 78$
 2. $x = 138, y = 42$
 3. $x = 12, y = 120$
 4. $x = 104, y = 8$
 5. $x = 4, y = 155$
 6. $x = 20, y = 20$
 7. Obtuse angles should be equal in measure; acute angles should be equal in measure; all four angles should have a sum of 360° .
 8. $a = 56, b = 124, c = 3, d = 9.5$

MATH 7A: LAST SLIDE for this week!