Name ______________________ Class ______________ Date ______________

Review 238

Adding and Subtracting Rational Numbers

To add or subtract fractions and mixed numbers with unlike denominators, first rewrite the fractions using the least common denominator (LCD).

Subtract: $2\frac{3}{4} - 5\frac{1}{3}$

$2\frac{3}{4} - 5\frac{1}{3} = \frac{11}{4} - \frac{16}{3}$

$= \frac{33}{12} - \frac{64}{12}$ ← The LCD is 12.

$= \frac{-31}{12}$ ← Subtract numerators.

$= -2\frac{7}{12}$ ← Simplify.

$2\frac{3}{4} - 5\frac{1}{3} = -2\frac{7}{12}$

You can use addition or subtraction to solve equations with rational numbers.

Solve: $h - \frac{3}{8} = \frac{1}{6}$

$h - \frac{3}{8} + \frac{3}{8} = \frac{1}{6} + \frac{3}{8}$ ← Add $\frac{3}{8}$.

$h = \frac{4}{24} + \frac{9}{24}$ ← The LCD is 24.

$h = \frac{13}{24}$

Find each sum or difference as a fraction or mixed number in simplest form.

1. $6\frac{1}{4} - 2\frac{3}{8}$ ________
2. $\frac{5}{6} + \left(-\frac{1}{2}\right)$ ________
3. $-4\frac{1}{3} - \left(-\frac{3}{5}\right)$ ________
4. $\frac{1}{8} - \left(-\frac{1}{6}\right)$ ________
5. $-1\frac{3}{8} - 4\frac{1}{12}$ ________
6. $\frac{7}{10} + \left(-1\frac{2}{5}\right)$ ________
7. $1\frac{5}{8} - \left(-2\frac{1}{2}\right)$ ________
8. $-2\frac{1}{3} - \left(-1\frac{5}{12}\right)$ ________
9. $-10 - \left(3\frac{11}{12}\right)$ ________
10. $1\frac{1}{3} - 4\frac{3}{4}$ ________
11. $9 + \left(-6\frac{5}{9}\right)$ ________
12. $-2\frac{5}{6} - 5\frac{5}{12}$ ________

Solve each equation. Write each answer as a mixed number or as a fraction in simplest form.

13. $y + \frac{7}{8} = -\frac{1}{4}$ ________
14. $c + -\frac{3}{5} = \frac{1}{2}$ ________
15. $m - 3\frac{2}{3} = 1\frac{1}{6}$ ________
16. $x - 2\frac{1}{4} = -3$ ________
17. $n + \frac{1}{2} = -2\frac{5}{6}$ ________
18. $\frac{1}{2} + d = -3\frac{1}{5}$ ________
19. $7.3 + g = 1\frac{4}{5}$ ________
20. $y - 4.1 = 2\frac{3}{4}$ ________
21. $z + 2.6 = 0.37$ ________

Name ________________ Class ________________ Date ________________

Review 239

Multiplying and Dividing Rational Numbers

To multiply rational numbers in fraction form, multiply numerators, then multiply denominators.

Multiply: $\frac{7}{12} \cdot 1\frac{4}{5}$

$\frac{7}{12} \cdot \frac{9}{5}$ ← fraction form

$\frac{7 \cdot 9}{12 \cdot 5}$ ← Multiply numerators. ← Multiply denominators.

$\frac{63}{60} = 1\frac{3}{60} = 1\frac{1}{20}$ ← Simplify.

To divide, multiply by the reciprocal of the divisor.

Divide: $-3\frac{1}{8} \div \frac{2}{3}$

$\frac{-25}{8} \div \frac{2}{3}$ ← fraction form

$\frac{-25}{8} \cdot \frac{3}{2}$ ← reciprocal of divisor

$\frac{-25 \cdot 3}{8 \cdot 2} = \frac{-75}{16}$ ← Multiply.

$= -4\frac{11}{16}$ ← Simplify.

Find each product. Write each answer as a fraction or mixed number in simplest form.

1. $\frac{8}{9} \cdot \left(-\frac{3}{4}\right)$
2. $-\frac{1}{2} \cdot \frac{4}{5}$
3. $-\frac{2}{3} \cdot \left(-\frac{1}{8}\right)$
4. $\frac{5}{6} \cdot \frac{3}{7}$
5. $\frac{3}{4} \cdot \left(-\frac{2}{3}\right)$
6. $3 \cdot 2\frac{1}{4}$
7. $-5\frac{1}{2} \cdot 1\frac{3}{4}$
8. $-2\frac{1}{8} \cdot (-3)$
9. $4\frac{1}{5} \cdot 2\frac{1}{2}$
10. $\frac{13}{15} \cdot \frac{5}{6}$
11. $-3\frac{2}{5} \cdot 2\frac{1}{2}$
12. $-5 \cdot \left(-2\frac{1}{4}\right)$
13. $-\frac{5}{8} \cdot 4\frac{2}{3}$
14. $-5 \cdot 3\frac{3}{10}$
15. $-2\frac{3}{5} \cdot \left(-3\frac{1}{3}\right)$

Find each quotient.

16. $\frac{5}{6} \div \frac{3}{5}$
17. $-\frac{3}{8} \div \left(-\frac{1}{2}\right)$
18. $-6 \div \frac{3}{4}$
19. $4 \div \left(-\frac{2}{3}\right)$
20. $5\frac{1}{4} \div 1\frac{1}{2}$
21. $1\frac{1}{4} \div \left(-\frac{2}{5}\right)$
22. $-\frac{3}{4} \div \left(-1\frac{1}{2}\right)$
23. $-1\frac{3}{5} \div \frac{1}{4}$
24. $2\frac{1}{2} \div \frac{3}{10}$
25. $-\frac{5}{9} \div \left(-\frac{2}{3}\right)$
26. $-6 \div 3\frac{5}{8}$
27. $\frac{3}{4} \div (-9)$

Course 3 Topics

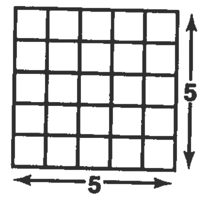
Name ______________________ Class ______________ Date ______________

Review 242

Exploring Square Roots and Irrational Numbers

The square of 5 is 25.
$5 \cdot 5 = 5^2 = 25$
The *square root* of 25 is 5 because $5^2 = 25$.

$\sqrt{25} = 5$



$1^2 = 1$
$2^2 = 4$
$3^2 = 9$
$4^2 = 16$
$5^2 = 25$
} *perfect squares*

You can use a calculator to find square roots.
Example: Find $\sqrt{36}$ and $\sqrt{21}$ to the nearest tenth.

36 [√] = 6   21 [√] ≈ 4.5825757 ≈ 4.6

You can estimate square roots like $\sqrt{52}$ and $\sqrt{61}$.

Perfect squares → 49, 52, 64

Estimate: $\sqrt{49} = 7$, $\sqrt{52} \approx 7$, $\sqrt{64} = 8$

Estimate: $\sqrt{49} = 7$, $\sqrt{61} \approx 8$, $\sqrt{64} = 8$

Find each square root. Round to the nearest integer if necessary. Use ≈ to show that a value is rounded.

1. $\sqrt{16}$ ________
2. $\sqrt{85}$ ________
3. $\sqrt{26}$ ________
4. $\sqrt{36}$ ________
5. $\sqrt{98}$ ________
6. $\sqrt{40}$ ________
7. $\sqrt{100}$ ________
8. $\sqrt{18}$ ________
9. $\sqrt{5}$ ________
10. $\sqrt{121}$ ________
11. $\sqrt{68}$ ________
12. $\sqrt{144}$ ________
13. $\sqrt{29}$ ________
14. $\sqrt{64}$ ________
15. $\sqrt{37}$ ________
16. $\sqrt{75}$ ________
17. $\sqrt{225}$ ________
18. $\sqrt{54}$ ________
19. $\sqrt{169}$ ________
20. $\sqrt{103}$ ________
21. $\sqrt{61}$ ________
22. $\sqrt{400}$ ________
23. $\sqrt{119}$ ________
24. $\sqrt{84}$ ________
25. If a whole number is not a perfect square, its square root is an *irrational number.* List the numbers from Exercises 1–24 that are irrational.

____

____

Course 3 Topics

Name ________________ Class ________________ Date ________________

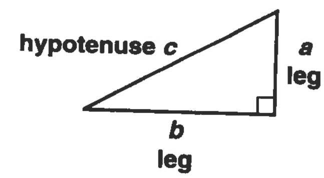
Review 243

The Pythagorean Theorem

The Pythagorean Theorem

The sum of the squares of the lengths of the *legs* of a right triangle is equal to the square of the length of the *hypotenuse.*

Also, if $a^2 + b^2 = c^2$, then the triangle is a right triangle.



$$a^2 + b^2 = c^2$$

Example 1: Find the length of a leg of a right triangle if the length of the other leg is 12 cm and the length of the hypotenuse is 13 cm.

$$\begin{aligned} a^2 + b^2 &= c^2 \\ 12^2 + b^2 &= 13^2 \\ 144 + b^2 &= 169 \\ 144 - 144 + b^2 &= 169 - 144 \\ b^2 &= 25 \\ b &= \sqrt{25} \\ b &= 5 \end{aligned}$$

The length of the leg is 5 cm.

Example 2: Is a triangle with sides 6 m, 7 m, and 10 m a right triangle?

$a^2 + b^2 = c^2$

$6^2 + 7^2 \stackrel{?}{=} 10^2$ ← Substitute.

$36 + 49 \stackrel{?}{=} 100$ ← Simplify.

$85 \neq 100$

The triangle is *not* a right triangle.

The lengths of two sides of a right triangle are given. Find the length of the third side.

1. legs: 6 ft and 8 ft
hypotenuse: ________

2. leg: 15 m
hypotenuse: 17 m
leg: ________

3. leg: 12 in.
hypotenuse: 15 in.
leg: ________

4. leg: 1.5 km
hypotenuse: 2.5 km
leg: ________

5. legs: 15 in. and 20 in.
hypotenuse: ________

6. leg: 16 m
hypotenuse: 34 m
leg: ________

Is a triangle with the given side lengths a right triangle?

7. 10 cm, 24 cm, 26 cm ________

8. 5 ft, 7 ft, 9 ft ________

9. 6 m, 12 m, 15 m ________

10. 5 in., 12 in., 13 in. ________

11. 30 mm, 40 mm, 50 mm ________

12. 2 yd, 5 yd, 8 yd ________

Name ______________________ Class ______________ Date ______________

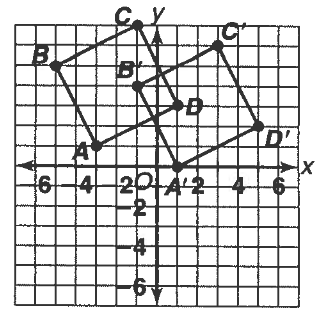
Review 191

Movements of figures on a plane are called **transformations.** A translation, or slide, moves all points the same distance and direction.

The translation $(x, y) \rightarrow (x + 4, y - 1)$ moves *each* point to the right 4 units and down 1 unit.

$A(-3, 1)$ moves to $(-3 + 4, 1 - 1)$, where point $A'(1, 0)$ is its **image.**

The square $ABCD$ moves to its image square $A'B'C'D'$.

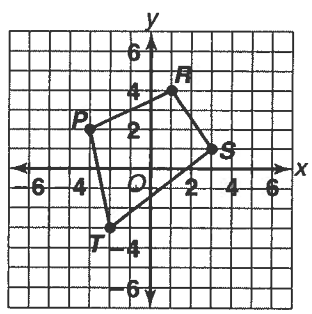


Complete the following for the figure above.

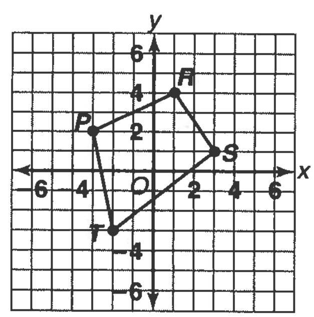
1. $B(-5, 5) \rightarrow B'$ (____, ____)
2. $C(-1, 7) \rightarrow C'$ (____, ____)
3. D(____, ____) $\rightarrow D'$(____, ____)

Graph each translation of figure *PRST*.

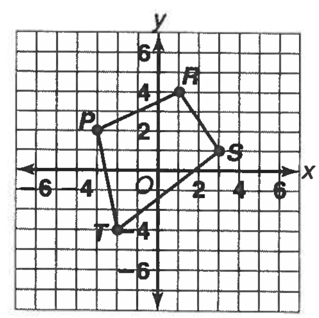
4. right 2 units



5. left 2 units, down 2 units



6. right 1 unit, up 3 units



Complete the rule for each translation.

7. right 3 units, up 1 unit

   $(x, y) \rightarrow$ ____________

8. left 4 units, up 5 units

   $(x, y) \rightarrow$ ____________

9. left 1 unit, down 9 units

   $(x, y) \rightarrow$ ____________

Write a rule for the translation.

10. left 1 unit, down 3 units

    ____

11. right 1 unit, up 2 units

    ____

12. left 3 units, up 2 units

    ____

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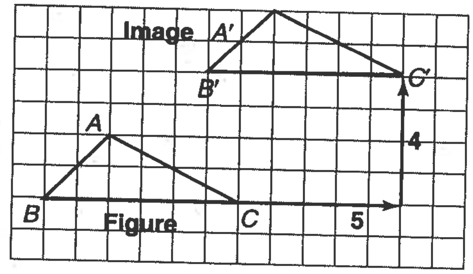
Review 232

Translations

A *translation* moves every point of a figure the same distance in the same direction.

Triangle ABC is translated 5 units to the right and 4 units up. The *image* of $\triangle ABC$ is $\triangle A'B'C'$.



You can write a rule to describe a translation in the coordinate plane.

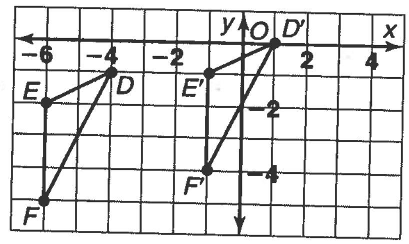
For the translation of $\triangle DEF$, the rule is:

Add 5 to each x-coordinate.
Add 1 to each y-coordinate.

$D(-4, -1) \rightarrow D'(1, 0)$

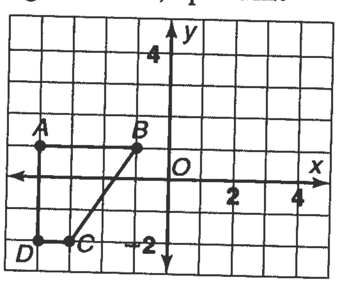
$E(-6, -2) \rightarrow E'(-1, -1)$

$F(-6, -5) \rightarrow F'(-1, -4)$



Copy each figure. Then graph the image after the given translation. Name the coordinates of the image.

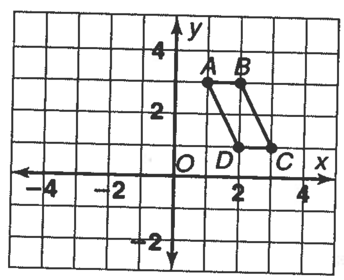
1. right 5 units, up 1 unit



____

____

2. left 3 units, down 2 units

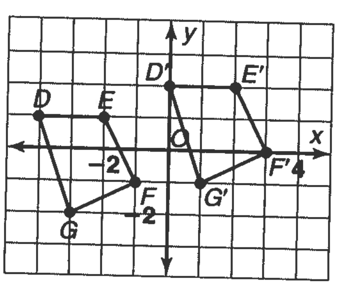


____

____

Use arrow notation to write a rule that describes the translation shown on each graph.

3.



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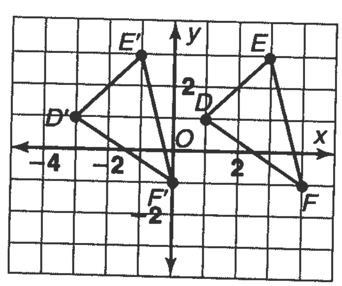
____

4.



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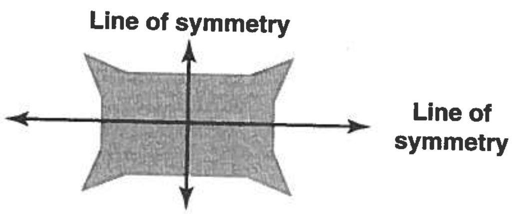
Name ______________________ Class ______________ Date ______________

Review 192

Symmetry

A figure is **symmetrical** if one side is a mirror image of the other. The line that divides a figure into two identical parts is called a **line of symmetry.**

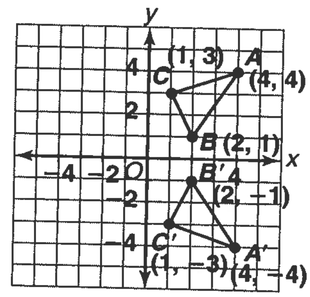
The figure below has 2 lines of symmetry.



You can trace the figure and fold it along either line to see that the two halves match.

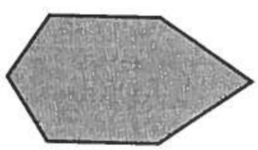
Reflections

A **reflection** is a transformation that creates a mirror image. $\triangle A'B'C'$ is the mirror image of $\triangle ABC$ across the x-axis. The x-axis is the **line of reflection.**



- When you reflect across the x-axis, the y-coordinates change sign.
- When you reflect across the y-axis, the x-coordinates change sign.
- When you reflect across a line of symmetry, the image is the figure itself.

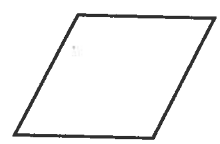
Draw the line(s) of symmetry. If there are no lines of symmetry, write *none.*

1. 

____

2. 

____

3. 

____

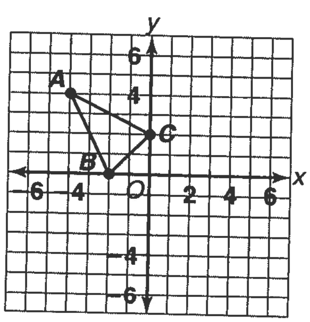
$\triangle ABC$ is shown. Draw $\triangle A'B'C'$ so it is a reflection of $\triangle ABC$ over the specified axis. Then complete each statement.

4. over the x-axis

$A(-4, 4) \rightarrow A'$ ______________

$B(-2, 0) \rightarrow B'$ ______________

$C(0, 2) \rightarrow C'$ ______________

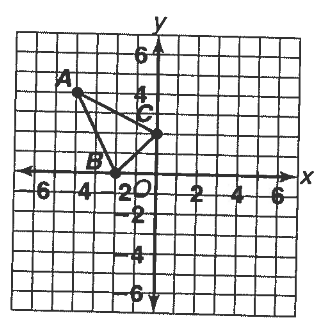


5. over the y-axis

$A(-4, 4) \rightarrow A'$ ______________

$B(-2, 0) \rightarrow B'$ ______________

$C(0, 2) \rightarrow C'$ ______________



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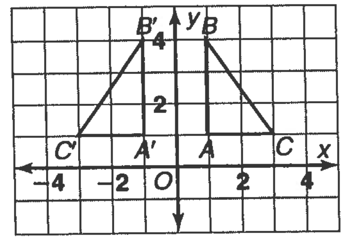
Review 233

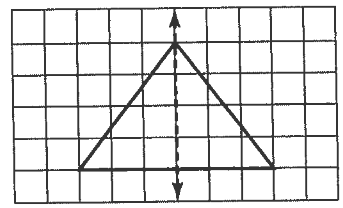
A *reflection* flips a figure over a line (the *line of reflection*). Figure $A'B'C'$ is the image of figure ABC after a reflection over the y-axis.

Each point of the image is the same distance from the line of reflection as the corresponding point of the original figure.

Since A is 1 unit to the right of the y-axis, locate A' 1 unit to the left of the y-axis.

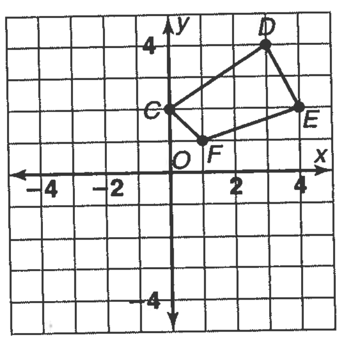
If the image is identical to the original figure, then the figure has *reflectional symmetry* and has a *line of symmetry.*



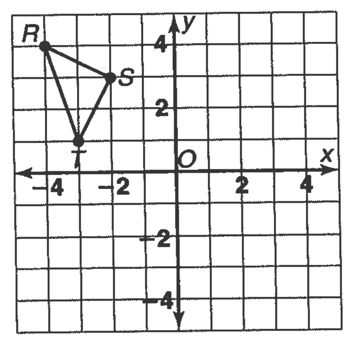


Copy each figure.

1. Reflect the figure over the x-axis.

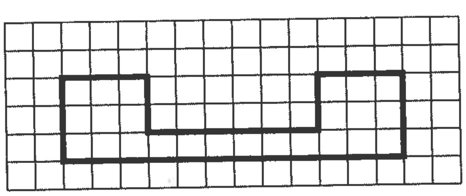


2. Reflect the figure over the y-axis.



Copy each figure. Does the figure have reflectional symmetry? If it does, draw all the lines of symmetry.

3.



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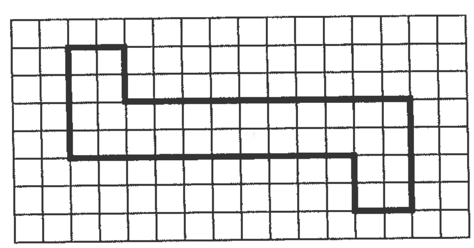
4.



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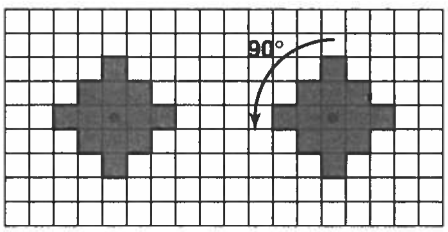
Review 193

A **rotation** is a transformation that turns a figure about a fixed point. The fixed point is called the **center of rotation.**

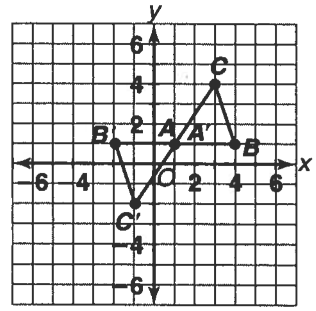
A figure has **rotational symmetry** it can be rotated less than 360° and fit exactly on top of the original figure.

The figure below has rotational symmetry.



For a rotation of 90° or 180° about its center, the figure fits exactly on top of itself.

To draw a 180° rotation about point A, trace $\triangle ABC$. Place a pencil tip on point A and rotate the tracing 180°. Mark points A', B', and C'. Then draw $\triangle A'B'C'$.



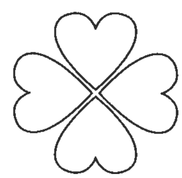
Does each figure have rotational symmetry?

1. 

____

2. 

____

3. 

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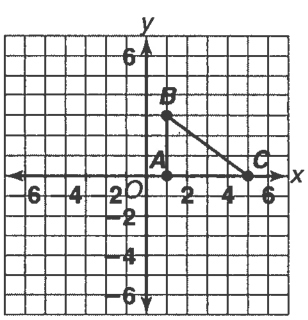
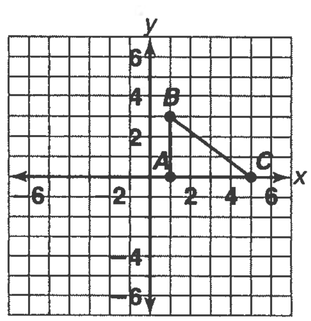
Draw the image of the figure after each rotation about point *O*.

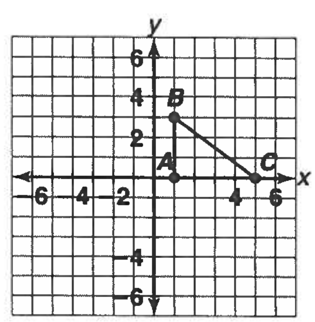
4. rotation of 90°



5. rotation of 180°



6. rotation of 270°



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Review 234

Rotations

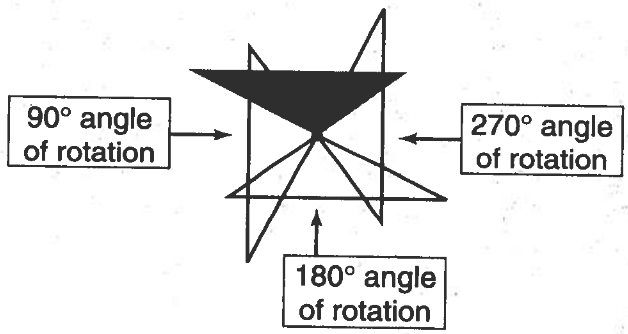
A *rotation* is a turn of a figure about a center point, the *center of rotation.*

A figure can be rotated up to 360° counterclockwise.

A figure has *rotational symmetry* if an image matches the original figure after a rotation of 180° or less.

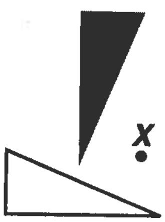
The angle measure the figure rotates is the *angle of rotation.*

The shaded triangle is rotated about its lower vertex.



The triangle does not have rotational symmetry.

The shaded figure is rotated 90°, 180°, or 270° about point *X*. The unshaded figure is its image. What is the angle of rotation?

1. 

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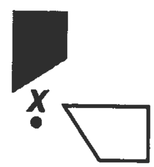
2. 

____

3. 

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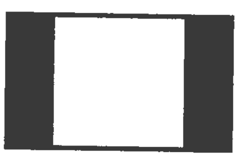
Judging by appearance, determine whether each figure has rotational symmetry. If it does, find the angle of rotation.

4. 

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5. 

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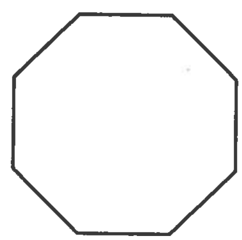
6. 

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Course 3 Topics

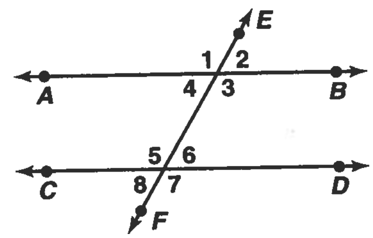
Name ______________________ Class ______________ Date ______________

Review 269

Angles and Parallel Lines

Look at the figure at the right.

- Line $\overleftrightarrow{AB}$ is parallel to line $\overleftrightarrow{CD}$ ($\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$)
- Line $\overleftrightarrow{EF}$ is a *transversal.*



Alternate interior angles lie within a pair of lines and on opposite sides of the transversal.

Example 1: $\angle 3$ and $\angle 5$, $\angle 4$ and $\angle 6$

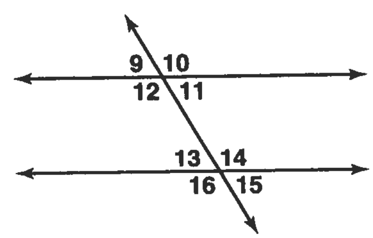
Alternate interior angles are congruent. If $m\angle 4$ is 60°, then $m\angle 6$ is also 60°.

Corresponding angles lie on the same side of the transversal and in corresponding positions.

Example 2: $\angle 1$ and $\angle 5$, $\angle 3$ and $\angle 7$

Corresponding angles are congruent. If $m\angle 1$ is 120°, then $m\angle 5$ is also 120°.

Use the diagram at the right to complete Exercises 1–2.



1. Name the alternate interior angles.

   a. $\angle 11$ and $\angle$? ______________

   b. $\angle 12$ and $\angle$? ______________

2. Name the corresponding angles.

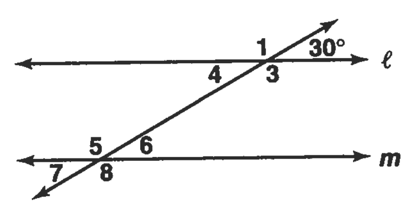
   a. $\angle 16$ and $\angle$? ______________

   b. $\angle 14$ and $\angle$? ______________

   c. $\angle 9$ and $\angle$? ______________

   d. $\angle 11$ and $\angle$? ______________

In the diagram at the right, $\ell \parallel m$. Find the measure of each angle.



3. $\angle 1$ ______________

4. $\angle 3$ ______________

5. $\angle 6$ ______________

6. $\angle 5$ ______________

7. $\angle 8$ ______________

8. $\angle 7$ ______________

Course 3 Topics

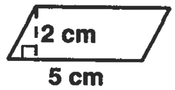
Name ____________ Class ____________ Date ____________

Review 274

Areas of Polygons

Example 1: Find the area of the parallelogram. Use the formula below.

Area = base × height



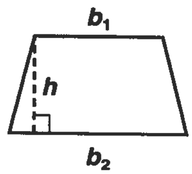
$A = bh$

$= 5 \times 2$

$= 10 \text{ cm}^2$

The area of a trapezoid is half the product of the height and the sum of the lengths of the bases.

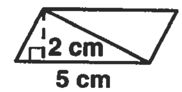
$A = \frac{1}{2}h(b_1 + b_2)$



Example 2: Find the area of the triangle. You can cut a parallelogram into two congruent triangles. So, the area of a triangle is half the area of a parallelogram.

To find the area of a triangle, use this formula.

Area = $\frac{1}{2}$base × height

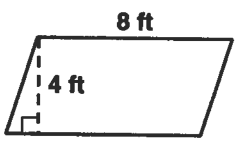


$A = \frac{1}{2}bh$

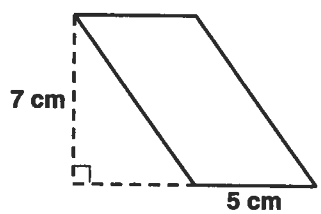
$= \frac{1}{2} \times 5 \times 2$

$= 5 \text{ cm}^2$

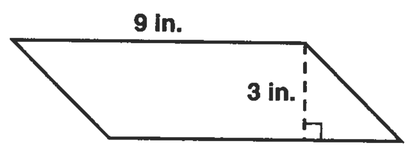
Find the area of each parallelogram.

1. 

$A =$ ____________

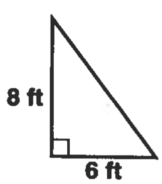
2. 

$A =$ ____________

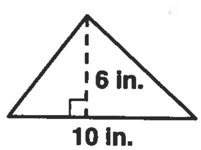
3. 

$A =$ ____________

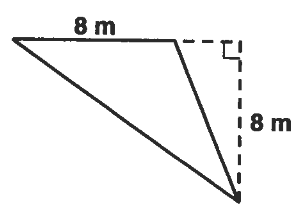
Find the area of each triangle.

4. 

$A =$ ____________

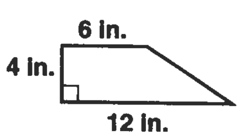
5. 

$A =$ ____________

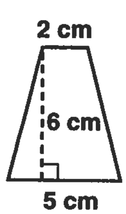
6. 

$A =$ ____________

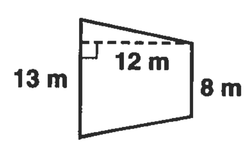
Find the area of each trapezoid.

7. 

$A =$ ____________

8. 

$A =$ ____________

9. 

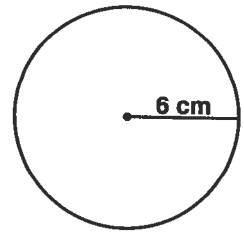
$A =$ ____________

Course 3 Topics

Name ______________________ Class ______________ Date ______________

Review 275

The distance around a circle is called the *circumference.*



- You can use a formula to find the circumference (C) of a circle. *Pi* (π) is approximately equal to ($\approx$) 3.14.

  Circumference = 2 × π × radius
  $C = 2\pi r$

- If you know the diameter, use this formula:
  Circumference = π × diameter
  $C = \pi d$

Circumference = $2 \times \pi \times r$
$C = 2 \times \pi \times 6$
≈ 37.7 cm

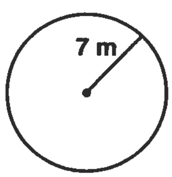
To find the *area of a circle,* use this formula:

Area = π × radius^2
$A = \pi r^2$

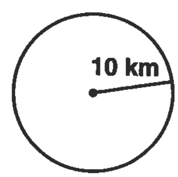
Area = $\pi \times r^2$
$A = \pi \times 6^2$
≈ 113.1 cm^2

The circumference of the circle is about 37.7 cm. The area of the circle is about 113.1 cm^2.

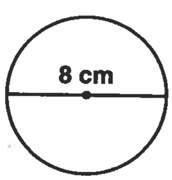
Find the circumference and area of each circle. Round to the nearest tenth.

1.


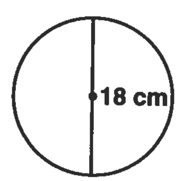
$C \approx$ ____________ $A \approx$ ____________

2.


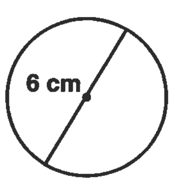
$C \approx$ ____________ $A \approx$ ____________

3.


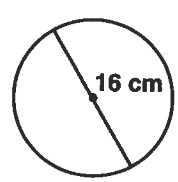
$C \approx$ ____________ $A \approx$ ____________

4.


$C \approx$ ____________ $A \approx$ ____________

5.


$C \approx$ ____________ $A \approx$ ____________

6.


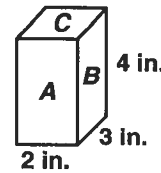
$C \approx$ ____________ $A \approx$ ____________

Name ________________________ Class ______________ Date ____________

Review 280

Surface Areas of Prisms and Cylinders

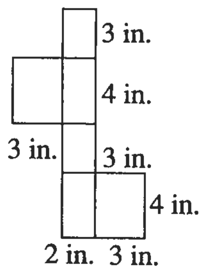
The *surface area* of a solid is the sum of the areas of its surfaces. S.A. stands for *surface area* and L.A. stand for *lateral area.*



Example 1: Find the surface area of the prism.

Using a Net to Find Surface Area of a Prism

Draw a net of the prism and find the area of each rectangle in the net.



S.A. =

$(2 \cdot 3) + (2 \cdot 3) + (3 \cdot 4) + (3 \cdot 4) + (2 \cdot 4) + (2 \cdot 4)$

$= 6 + 6 + 12 + 12 + 8 + 8$

$= 52 \text{ in.}^2$

Using the Prism Surface Area Formula

The lateral area of a prism is the product of the perimeter of the base and the height of the prism.

L.A. $= ph$

S.A. $= \text{L.A.} + 2B$

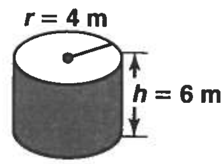
$= ph + 2B$

$= (2 + 2 + 3 + 3)4 + 2(2 \cdot 3)$

$= 10(4) + 2(6)$

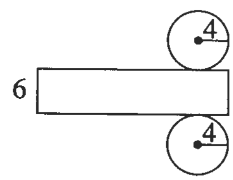
$= 40 + 12 = 52 \text{ in.}^2$

Example 2: Find the surface area of the cylinder.



Using a Net to Find Surface Area of a Cylinder

Draw a net of the cylinder and find the area of each shape in the net.



S.A. $= 16\pi + 16\pi + 48\pi$

$= 80\pi$

≈ 251.33

Using the Cylinder Surface Area Formula

S.A. $= 2\pi rh + 2\pi r^2$

$= 2\pi(4)(6) + 2\pi(4^2)$

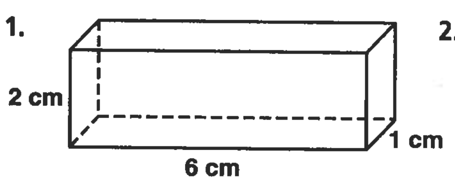
$= 48\pi + 32\pi$

$= 80\pi$

≈ 251.33

Find the lateral and surface area of each figure to the nearest whole unit.

1.



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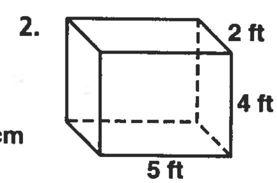
2.



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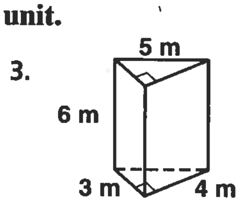
3.



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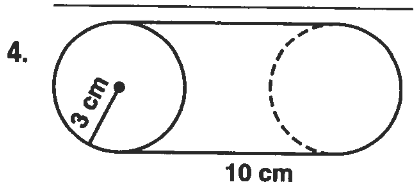
4.



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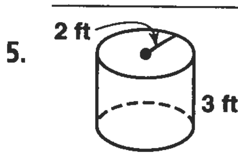
5.



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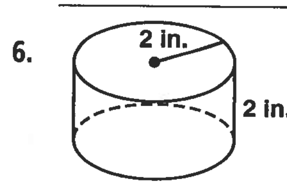
6.



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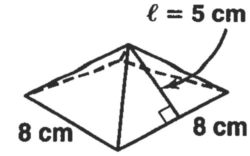
Course 3 Topics

Name ______________________ Class ______________ Date ____________

Review 281

Surface Areas of Pyramids and Cones

Example 1: Find the surface area of the prism.



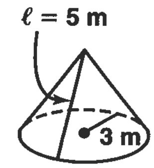
The lateral area of a square pyramid is four times the area of one of the lateral faces.

$$\text{L.A.} = 4 \cdot \left(\tfrac{1}{2}b\ell\right) = 2b\ell$$

The surface area of a square pyramid is the sum of the lateral area and the area of the base.

$$\begin{aligned}\text{S.A.} &= \text{L.A.} + B \\ &= 2b\ell + b^2 \\ &= 2(8)(5) + 8^2 \\ &= 80 + 64 \\ &= 144 \text{ cm}^2\end{aligned}$$

Example 2: Find the surface area of the cone.



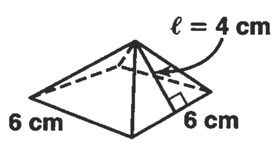
The lateral area of a cone is one half the product of the circumference of the base and the slant height.

$$\text{L.A.} = \tfrac{1}{2}(2\pi r)\ell = \pi r\ell$$

$$\begin{aligned}\text{S.A.} &= \text{L.A.} + B \\ &= \pi r\ell + \pi r^2 \\ &= \pi(3)(5) + \pi(3^2) \\ &= 15\pi + 9\pi \\ &= 24\pi \approx 75.4 \text{ m}^2\end{aligned}$$

Find the lateral and surface area of each square pyramid.

1.



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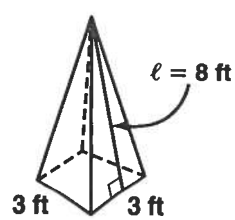
2.



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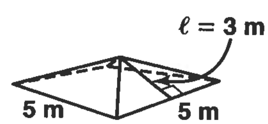
3.



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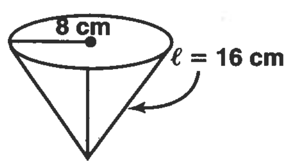
Find the surface area of each cone to the nearest whole unit.

4.



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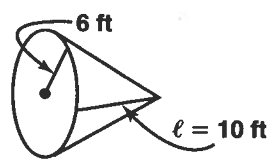
5.



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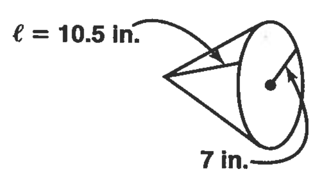
6.



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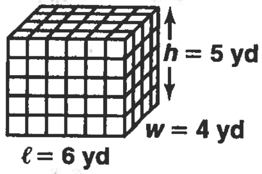
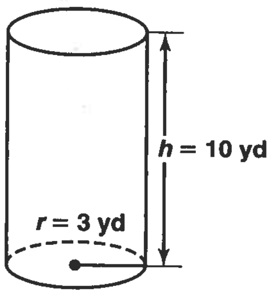
Course 3 Topics

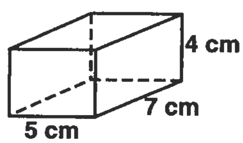
Name ______________________ Class ______________ Date ______________

Review 282

To find the volume of a prism or a cylinder, multiply the base area *B* and the height *h*.

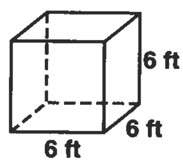
	① Find the base area *B*.	② Multiply base area *B* and height *h*. $V = Bh$
	$B = \ell w$ $= 6 \cdot 4$ $= 24\text{ yd}^2$	$V = Bh$ $= 24 \cdot 5$ $= 120\text{ yd}^3$ The volume is 120 yd^3.
	$B = \pi r^2$ $= \pi \cdot 3^2$ $\approx 28.27\text{ yd}^2$	$V = Bh$ $\approx 28.27 \cdot 10$ $\approx 282.7\text{ yd}^3$ The volume is about 283 yd^3.

Find the base area and volume of each prism.

1. 

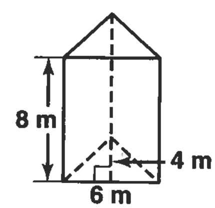
$B =$ ______________

$V =$ ______________

2. 

$B =$ ______________

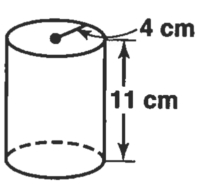
$V =$ ______________

3. 

$B =$ ______________

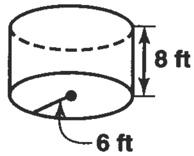
$V =$ ______________

Find the base area of each cylinder to the nearest hundredth. Then find the volume of each cylinder to the nearest whole unit.

4. 

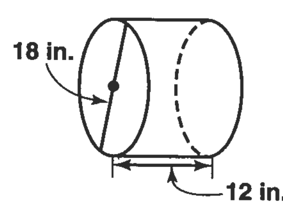
$B \approx$ ______________

$V \approx$ ______________

5. 

$B \approx$ ______________

$V \approx$ ______________

6. 

$B \approx$ ______________

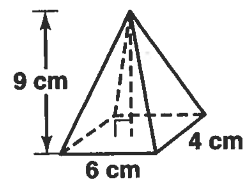
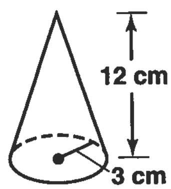
$V \approx$ ______________

Name ______________________ Class ______________ Date ______________

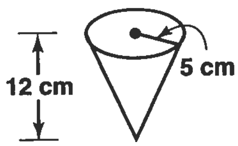
Review 283

Volumes of Pyramids and Cones

To find the volume of a pyramid or cone, multiply $\frac{1}{3}$, the base area B, and the height h.

	① Find the base area B.	② Multiply $\frac{1}{3}$, the base area B, and the height h. $V = \frac{1}{3}Bh$
	$B = \ell w$ $= 6 \cdot 4$ $= 24\text{ cm}^2$	$V = \frac{1}{3}Bh$ $= \frac{1}{3}(24)(9)$ $= 72\text{ cm}^3$ The volume is 72 cm^3.
	$B = \pi r^2$ $= \pi \cdot 3^2$ $\approx 28.27\text{ cm}^2$	$V = \frac{1}{3}Bh$ $\approx \frac{1}{3}(28.27)(12)$ $\approx 113.08\text{ cm}^3$ The volume is about 113.08 cm^3.

Find the volume of each figure to the nearest whole unit.

1. 

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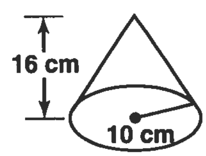
2. 

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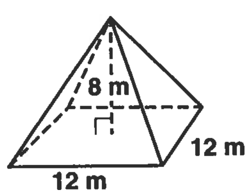
3. 

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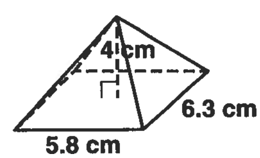
4. 

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5. Find the height of a cone with an approximate volume of 134 cm^3 and a radius of 4 cm.

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Course 3 Topics