ALBERT

Name _____ Date _____

Understanding Angles and Degrees Worksheet

Grade 4 · Common Core 4.MD.C.5

> Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: (a) An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. (b) An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

Practice

Builds the skill step by step.

1. A full turn around a circle is how many degrees?

2. How many degrees is a half turn?

3. How many degrees is a quarter turn?

4. An angle that turns through $\frac{1}{360}$ of a circle is called what?

   A. a straight angle

   B. a one-degree angle

   C. a 360-degree angle

   D. a right angle

5. An angle turns through $\frac{3}{4}$ of a circle. How many degrees is it?

6. An angle turns through 45 one-degree angles. What is its measure?

7. Two rays that share an endpoint form what?

   A. a circle

   B. a line segment

   C. an angle

   D. a line

8. How many one-degree angles make a 30° angle?

9. What is $\frac{1}{4}$ of 360?

10. A clock's minute hand turns from 12 to 3. How many degrees does it turn?

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On Level

Grade-level practice.

1. A clock's minute hand turns from 12 to 6. How many degrees does it turn?

2. How many degrees is $\frac{1}{6}$ of a full turn?

3. How many degrees is $\frac{1}{8}$ of a full turn?

4. An angle turns through $\frac{1}{3}$ of a circle. How many degrees is it?

5. Which turns through more: a 100° angle or a quarter turn?

   A. the 100° angle

   B. the quarter turn

   C. They are the same.

   D. You can't tell.

6. The minute hand of a clock moves for 20 minutes. How many degrees does it turn?

7. How many degrees is $\frac{1}{12}$ of a circle?

8. An angle measures 270°. What fraction of a full turn is it?

9. Two angles both measure 40°. One is drawn with long rays and one with short rays. Which is true?

   A. They are the same size, because angle measure is the amount of turn, not the length of the rays.

   B. The one with longer rays is bigger.

   C. The one with shorter rays is bigger.

   D. You can't compare them.

10. A skateboarder spins 180° and then another 180° in the same direction. How many degrees did she turn in all?

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Challenge

Multi-step and word problems that stretch it.

1. A clock's minute hand turns from 12 to 4. How many degrees does it turn?

2. A wheel turns $1\frac{1}{2}$ times. How many degrees does it turn?

3. How many 15° angles fit in a full turn?

4. A 60° angle is what fraction of a full turn?

5. Ava draws a 30° angle with very long rays and a 45° angle with short rays. She says the 30° angle is bigger. Which is true?

   A. They are the same size.

   B. Ava is right, because its rays are longer.

   C. Ava is wrong. The 45° angle turns more, so it is bigger.

   D. You can't compare angles.

6. The minute hand of a clock moves for 35 minutes. How many degrees does it turn?

7. An angle turns through $\frac{1}{10}$ of a circle. How many degrees is it?

8. A robot makes two quarter turns and then a $\frac{1}{8}$ turn, all in the same direction. How many degrees does it turn in all?

9. How many degrees does the hour hand of a clock turn in one hour?

10. An angle measures 300°. How many more degrees would make a full turn?