Angles and triangles Worksheet

Geometry and Trigonometry

Name _____ Date _____

Warm-up

1. Two angles form a straight line. One is $64°$. Find the other, in degrees.

2. Legs 6 and 8. Find the hypotenuse.

3. Similar triangles have scale factor 6. A side is 7. How long is the matching side in the larger triangle?

4. A triangle has angles $53°$ and $51°$. Find the third, in degrees.

5. Is a triangle with sides 5, 12 and 13 a right triangle? Calculate $5^2 + 12^2$.

Practice

6. An isosceles triangle has a top angle of $72°$. Find a base angle, in degrees.

7. How far apart are $(2, 2)$ and $(8, 10)$?

8. A triangle's sides are multiplied by 7. What happens to its area?
   (A) Multiplied by 49 (B) Stays the same (C) Multiplied by 14 (D) Multiplied by 7

9. Vertical angles measure $4x + 7$ and $2x + 25$. Find x.

© No Limit Math. Free for personal and classroom use.

10. Find the hypotenuse with legs 1 and 4. Leave it as a square root.

11. A triangle's sides are multiplied by 7. What happens to its perimeter?
    (A) Multiplied by 49 (B) Multiplied by 7 (C) Multiplied by 9 (D) Stays the same

12. Three angles around a point are $88°$, $99°$ and $x°$. Find x.

13. Hypotenuse 39, one leg 15. Find the other leg.

Challenge

14. An exterior angle of a triangle is $96°$. One remote interior angle is $44°$. Find the other, in degrees.

15. A square has a diagonal of $11\sqrt{2}$. What's its side?

16. A map scale is 1:4000. A park's area on the map is 4 cm^2. How many times larger is the real area than the map area, in millions?

17. A triangle's angles are in the ratio $1 : 2 : 6$, with 9 parts in all. What's the smallest angle, in degrees?

18. You walk 16 km north, then 12 km east. How far are you from where you started, in km?

© No Limit Math. Free for personal and classroom use.

Angles and triangles Worksheet: Answer Key

Geometry and Trigonometry

1. 116

   $180 - 64$.

2. 10

   $6^2 + 8^2 = 100$. Then take the root.

3. 42

   Multiply by the scale factor.

4. 76

   $180 - 53 - 51$.

5. 169

   That's 13^2, so yes.

6. 54

   $72 + 2b = 180$.

7. 10

   Across 6, up 8.

8. (A) Multiplied by 49

   Area scales by the square of the factor.

9. 9

   Vertical angles are equal, so set them equal.

10. $\sqrt{17}$

    $1^2 + 4^2 = 17$.

11. (B) Multiplied by 7

    Length scales by the factor.

12. 173

    Around a point is 360: $360 - 88 - 99$.

13. 36

    $39^2 - 15^2 = 1296$. Then take the root.

14. 52

    An exterior angle equals the sum of the two remote interior angles.

15. 11

    $s^2 + s^2 = 2121$, so $s^2 = 121$.

© No Limit Math. Free for personal and classroom use.

16. 16

    Length scale is 4000. Area scales by the square.

17. 20

    Parts: 9. Each part is $180 \div 9$.

18. 20

    North and east meet at a right angle.

Stuck on something? Book a free 20-minute consultation at nolimitmath.com/book.