Lines, Angles, and Forms

Answer Keys, Program 2: Worksheets 1-3

Each question on every worksheet offers the students the option of marking "Teacher" instead of or in conjunction with answering the question. The "Teacher" option is included to support student understanding and achievement. Students may have as much help and guidance as they need to understand concepts and master skills.

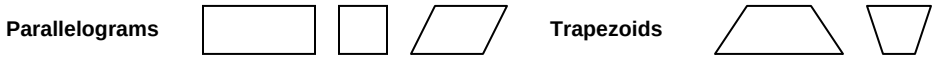
Instructors may decide whether to use the two or four point scoring rubric for constructed response problems (problems that use numbers, pictures, or words to justify/explain student answers). See the appendix for the complete rubrics.

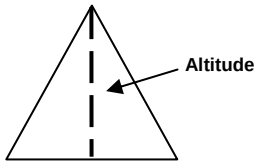
Two-Point Scoring Rubric	Four-Point Scoring Rubric
2 – Complete	4 – Complete
1 – Partial	3 – Clear
0 – Inadequate	2 – Partial
	1 – Minimal
	0 - Inadequate

Worksheet 1

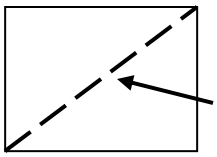
1. C. 73°
2. D. 65°
3. B. supplementary angles
4. C. A 92° angle is acute.
5. C. 135°
6. A. 100°
7. D. 90°
8. B. 60°
9. C.1 and 2 (Angles1, 2, 7, and 8 are all exterior angles.)
10. A. 120°

Worksheet 2

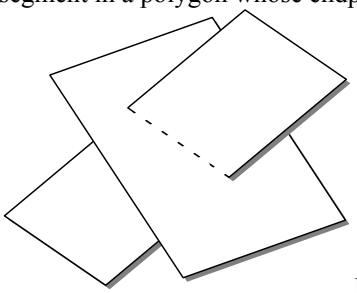
1. B. scalene
2. D. isosceles
3. C. an octagon
4. B. trapezoid
5. A. perpendicular
6. 

Answers should reflect the following facts: 1) A parallelogram is a quadrilateral (four-sided polygon) that has two pairs of opposite sides that are parallel. 2) A trapezoid is a quadrilateral that has one pair of opposite sides that are parallel. Students will need to identify the differences and similarities between the two figures.
7. 

Drawings or diagrams should reflect the following facts: 1) An equilateral triangle is a triangle with three congruent sides and three equal angles. 2) Altitude is the height of the triangle.

8. 

Drawings or diagrams should reflect the following facts: 1) A polygon is a two-dimensional geometric figure with these characteristics a) It is made of straight line segments. b) Each segment touches exactly two other segments, one at each of its endpoints. c) It is closed -- it divides the plane into two distinct regions, one inside and the other outside the polygon. 2) A diagonal is a segment in a polygon whose endpoints are 2 nonconsecutive vertices.

9. 
Drawings or diagrams should reflect the follwing facts: 1) A plane is a flat, two-dimensional object. 2) The planes must not be parallel to one another. 3) The planes must not be perpendicular to one another. 4) The planes must intersect.

10. Answers should reflect the following facts. 1) A rectangle is a quarilateral with four 90° angles. 2) A square is a quadrilateral with four congruent sides and four 90° angles. 3) A rhombus is a quadrilateral with four congruent sides – but the angles in a rhombus do not need to be right angles.

Worksheet 3

1. B. 180º
2. D. acute isosceles triangle
3. B. perpendicular
4. B. 10 degrees
5. Answers should reflect the following facts. 1) Triangle A is a right, scalene triangle with every side a different length and every angle a different measure. 2) Triangle B is an isosceles triangle with two congruent sides and two congruent angles.
6. 54 meters. Students may use the Pythagorean Theorum to solve the problem. The square of the hypotenuse equals the sum of the square of the two sides. $20^2 + 50^2 = 400 + 2500$ or 2900. $\sqrt{2900} = 53.8516\ldots$ or 54 when rounded to the nearest whole number.
7. 18 meters. Answers should reflect the following facts. 1) Two polygons are similar polygons if corresponding angles have the same measure and corresponding sides are in proportion. 2) The proportion between the widths {4 feet, 12 feet} is 1 to 3 (12 is 3×4 and $3 \times 6 = 18$).
8. 81°. Answers should reflect the following facts: 1) The sum of the interior angles of a triangle is 180°. 2) 180° – (42° + 57°) = 81°.
9. C. Opposite angles are congruent.
10. A. 36 feet