

Name:

Partners:

PreCalculus

Date:

Review 4 Version A

[A] Circle whether each statement is true or false.

T F 1. In triangle DFG , $f = \sqrt{d^2 + g^2 - 2df \cos G}$.

T F 2. $m \sin S$, $s \sin T$, and $t \sin M$ are altitudes of triangle MST .

T F 3. No triangle exists with measurements $K = 81^\circ$, $k = 23$, and $v = 32$.

T F 4. No triangle exists with measurements $K = 81^\circ$, $p = 23$, and $v = 32$.

T F 5. The ambiguous case of the law of sines is when \sin^{-1} is used to solve for an angle.

T F 6. The law of sines would be used to solve a triangle with $H = 19^\circ$, $p = 24$, and $R = 52^\circ$.

[B] Consider a triangle with $E = 36^\circ$, $e = 8$, and $q = 10$.

1. Find one solution and write it in the blanks below. Show all work clearly and with proper notation.

$Q_1 =$ _____ $R_1 =$ _____ $r_1 =$ _____

2. Find the second triangle and write it in the blanks below. Show all work clearly and with proper notation.

$Q_2 =$ _____ $R_2 =$ _____ $r_2 =$ _____

3. Calculate the following, rounded to the nearest tenth. If they are not all equal, mark part [B] as wrong.

a) $\frac{e}{\sin E} =$

b) $\frac{q_1}{\sin Q_1} =$

c) $\frac{q_2}{\sin Q_2} =$

d) $\frac{r_1}{\sin R_1} =$

e) $\frac{r_2}{\sin R_2} =$

[C] For each of the following, use the law of sines or the law of cosines to find one side or angle if it exists. If a second triangle exists, find this value for the second triangle as well.

1. $a = 16, b = 23, C = 52^\circ$

2. $m = 40, M = 24^\circ, V = 86^\circ$

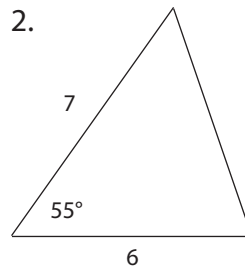
3. $a = 22, g = 16, w = 19$

4. $B = 39^\circ, b = 100, f = 110$

[D] Find the area of each of the following triangles.

1. $j = 10, m = 9, r = 13$

2.



[E] Do the following to organize your group's reviews.

1. Make sure your name and your partners' names are at the top of your review the first day.
2. Staple the reviews in order, all facing the same way. Put the staple in the very top left corner if everyone is finished or if the review is due; otherwise put the staple in the top right corner.

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Review 4 Version B

[A] Circle whether each statement is true or false.

T F 1. In triangle DFG , $f = \sqrt{d^2 + g^2 - 2df \cos G}$.

T F 2. $m \sin S$, $s \sin T$, and $t \sin M$ are altitudes of triangle MST .

T F 3. No triangle exists with measurements $K = 81^\circ$, $k = 23$, and $v = 32$.

T F 4. No triangle exists with measurements $K = 81^\circ$, $p = 23$, and $v = 32$.

T F 5. The ambiguous case of the law of sines is when \sin^{-1} is used to solve for an angle.

T F 6. The law of sines would be used to solve a triangle with $H = 19^\circ$, $p = 24$, and $R = 52^\circ$.

[B] Consider a triangle with $E = 51^\circ$, $e = 29$, and $q = 33$.

1. Find one solution and write it in the blanks below. Show all work clearly and with proper notation.

$Q_1 =$ _____ $R_1 =$ _____ $r_1 =$ _____

2. Find the second triangle and write it in the blanks below. Show all work clearly and with proper notation.

$Q_2 =$ _____ $R_2 =$ _____ $r_2 =$ _____

3. Calculate the following, rounded to the nearest tenth. If they are not all equal, mark part [B] as wrong.

a) $\frac{e}{\sin E} =$

b) $\frac{q_1}{\sin Q_1} =$

c) $\frac{q_2}{\sin Q_2} =$

d) $\frac{r_1}{\sin R_1} =$

e) $\frac{r_2}{\sin R_2} =$

[C] For each of the following, use the law of sines or the law of cosines to find one side or angle if it exists. If a second triangle exists, find this value for the second triangle as well.

1. $m = 19, n = 34, p = 38$

2. $D = 40^\circ, d = 36, w = 39$

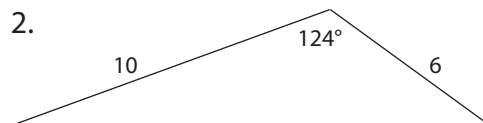
3. $D = 22^\circ, q = 10, w = 7$

4. $B = 69^\circ, b = 18, G = 41^\circ$

[D] Find the area of each of the following triangles.

1. $a = 15, d = 9, f = 16$

2.



[E] Bonus. Find the perimeter of the triangle.

1. $A = 58^\circ, c = 20, \text{area} = 36$

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Review 4 Version C

[A] Circle whether each statement is true or false.

T F 1. In triangle DFG , $f = \sqrt{d^2 + g^2 - 2dg \cos G}$.

T F 2. $m \sin S$, $s \sin T$, and $t \sin M$ are altitudes of triangle MST .

T F 3. No triangle exists with measurements $K = 81^\circ$, $k = 23$, and $v = 32$.

T F 4. No triangle exists with measurements $K = 81^\circ$, $p = 23$, and $v = 32$.

T F 5. The ambiguous case of the law of sines is when \sin^{-1} is used to solve for an angle.

T F 6. The law of sines would be used to solve a triangle with $H = 19^\circ$, $p = 24$, and $R = 52^\circ$.

[B] Consider a triangle with $E = 33^\circ$, $e = 60$, and $q = 72$.

1. Find one solution and write it in the blanks below. Show all work clearly and with proper notation.

$Q_1 =$ _____ $R_1 =$ _____ $r_1 =$ _____

2. Find the second triangle and write it in the blanks below. Show all work clearly and with proper notation.

$Q_2 =$ _____ $R_2 =$ _____ $r_2 =$ _____

3. Calculate the following, rounded to the nearest tenth. If they are not all equal, mark part [B] as wrong.

a) $\frac{e}{\sin E} =$

b) $\frac{q_1}{\sin Q_1} =$

c) $\frac{q_2}{\sin Q_2} =$

d) $\frac{r_1}{\sin R_1} =$

e) $\frac{r_2}{\sin R_2} =$

[C] For each of the following, use the law of sines or the law of cosines to find one side or angle if it exists. If a second triangle exists, find this value for the second triangle as well.

1. $a = 36, A = 103^\circ, H = 57^\circ$

2. $R = 81^\circ, t = 24, v = 19$

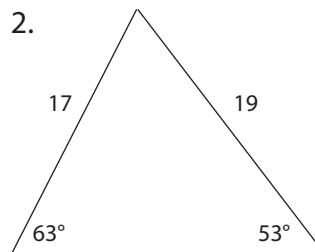
3. $b = 20, s = 16, z = 15$

4. $e = 34, G = 79^\circ, g = 120$

[D] Find the area of each of the following triangles.

1. $b = 19, m = 25, t = 31$

2.



[E] Bonus. Find the perimeter of the triangle.

1. $D = 44^\circ, v = 9, \text{area} = 21$

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Review 4 Version D

[A] Circle whether each statement is true or false.

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T F 2. $m \sin S$, $s \sin T$, and $t \sin M$ are altitudes of triangle MST .

T F 3. No triangle exists with measurements $K = 81^\circ$, $k = 23$, and $v = 32$.

T F 4. No triangle exists with measurements $K = 81^\circ$, $p = 23$, and $v = 32$.

T F 5. The ambiguous case of the law of sines is when \sin^{-1} is used to solve for an angle.

T F 6. The law of sines would be used to solve a triangle with $H = 19^\circ$, $p = 24$, and $R = 52^\circ$.

[B] Consider a triangle with $E = 50^\circ$, $e = 96$, and $q = 101$.

1. Find one solution and write it in the blanks below. Show all work clearly and with proper notation.

$Q_1 =$ _____ $R_1 =$ _____ $r_1 =$ _____

2. Find the second triangle and write it in the blanks below. Show all work clearly and with proper notation.

$Q_2 =$ _____ $R_2 =$ _____ $r_2 =$ _____

3. Calculate the following, rounded to the nearest tenth. If they are not all equal, mark part [B] as wrong.

a) $\frac{e}{\sin E} =$

b) $\frac{q_1}{\sin Q_1} =$

c) $\frac{q_2}{\sin Q_2} =$

d) $\frac{r_1}{\sin R_1} =$

e) $\frac{r_2}{\sin R_2} =$

[C] For each of the following, use the law of sines or the law of cosines to find one side or angle if it exists. If a second triangle exists, find this value for the second triangle as well.

1. $d = 11, f = 23, F = 52^\circ$

2. $m = 4, w = 13, z = 5$

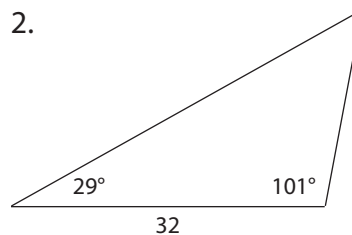
3. $H = 22^\circ, g = 4.5, w = 1.9$

4. $T = 39^\circ, t = 70, V = 110^\circ$

[D] Find the area of each of the following triangles.

1. $k = 45, n = 60, p = 102$

2.



[E] Bonus. Find the perimeter of the triangle.

1. $F = 28^\circ, g = 65, \text{area} = 19$