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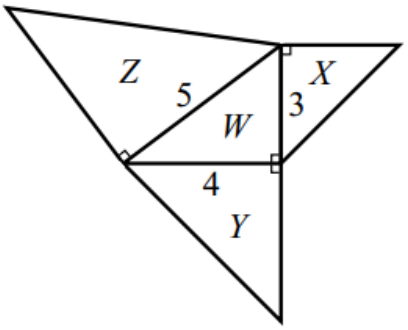
2002 Q16

16. Right isosceles triangles are constructed on the sides of a 3-4-5 right triangle, as shown. A capital letter represents the area of each triangle. Which one of the following is true?



(A) $X + Z = W + Y$ **(B)** $W + X = Z$ **(C)** $3X + 4Y = 5Z$
(D) $X + W = \frac{1}{2}(Y + Z)$ **(E)** $X + Y = Z$

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2011 Q16

16. Let A be the area of a triangle with sides of length 25, 25, and 30. Let B be the area of a triangle with sides of length 25, 25, and 40. What is the relationship between A and B?

(A) $A = \frac{9}{16}B$ **(B)** $A = \frac{3}{4}B$ **(C)** $A = B$ **(D)** $A = \frac{4}{3}B$ **(E)** $A = \frac{16}{9}B$

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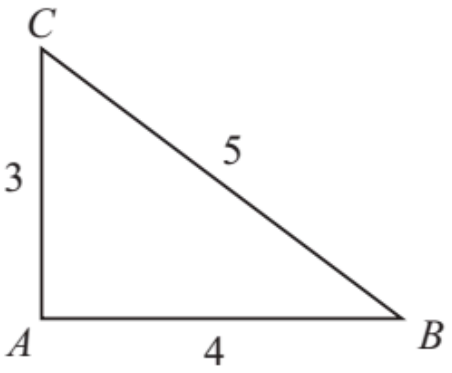
2017 Q16

16. In the figure shown below, choose point D on side $\overline{BC}$ so that $\triangle ACD$ and $\triangle ABD$ have equal perimeters. What is the area of $\triangle ABD$?



(A) $\frac{3}{4}$ **(B)** $\frac{3}{2}$ **(C)** 2 **(D)** $\frac{12}{5}$ **(E)** $\frac{5}{2}$

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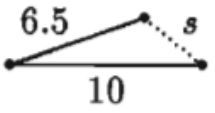
1992 Q17

17. The sides of a triangle have lengths 6.5, 10, and s, where s is a whole number. What is the smallest possible value of s?

(A) 3 **(B)** 4 **(C)** 5 **(D)** 6 **(E)** 7



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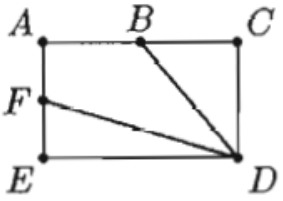
1993 Q18

18. The rectangle shown has length $AC = 32$, width $AE = 20$, and B and F are midpoints of $\overline{AC}$ and $\overline{AE}$, respectively. The area of the quadrilateral $ABDF$ is

(A) 320 **(B)** 325 **(C)** 330
(D) 335 **(E)** 340



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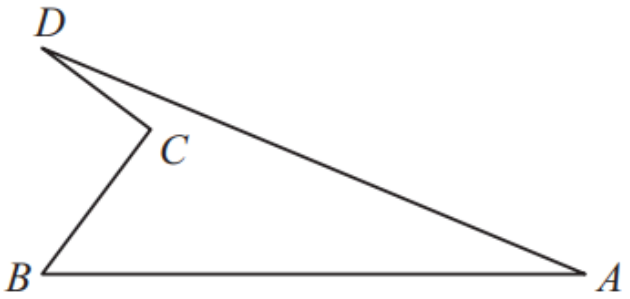
2017 Q18

18. In the non-convex quadrilateral $ABCD$ shown below, $\angle BCD$ is a right angle, $AB = 12$, $BC = 4$, $CD = 3$, and $AD = 13$.



What is the area of quadrilateral $ABCD$?

(A) 12 **(B)** 24 **(C)** 26 **(D)** 30 **(E)** 36

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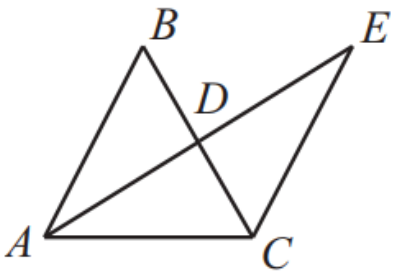
2006 Q19

19. Triangle ABC is an isosceles triangle with $AB = BC$. Point D is the midpoint of both $\overline{BC}$ and $\overline{AE}$, and $\overline{CE}$ is 11 units long. Triangle ABD is congruent to triangle ECD. What is the length of $\overline{BD}$?



(A) 4 **(B)** 4.5 **(C)** 5 **(D)** 5.5 **(E)** 6

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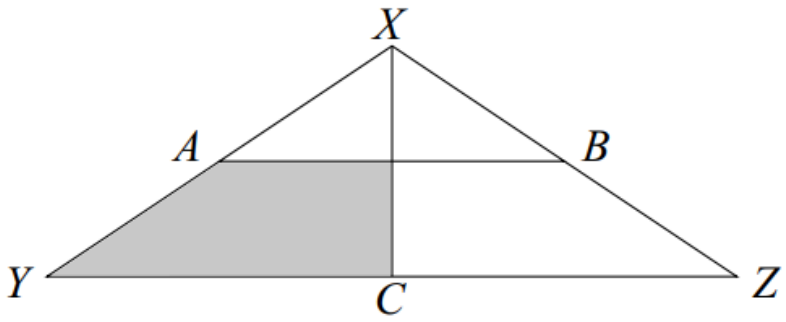
2009 Q19

19. Two angles of an isosceles triangle measure 70° and x°. What is the sum of the three possible values of x?

(A) 95 **(B)** 125 **(C)** 140 **(D)** 165 **(E)** 180

2002 Q20

20. The area of triangle XYZ is 8 square inches. Points A and B are midpoints of congruent segments $\overline{XY}$ and $\overline{XZ}$. Altitude $\overline{XC}$ bisects $\overline{YZ}$. The area (in square inches) of the shaded region is



(A) $1\frac{1}{2}$ **(B)** 2 **(C)** $2\frac{1}{2}$ **(D)** 3 **(E)** $3\frac{1}{2}$