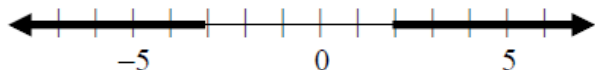


Algebra 1/Geometry
Curriculum
Practice Test

2015

- 1) $3x^2(x^2 - 4xy + y) =$ (A) $-12x^5y^2$ (B) $3x^4 - 24x^3y$
(C) $3x^4 - 4xy + y$ (D) $3x^4 + 12x^3y + 3x^2y$ (E) $3x^4 - 12x^3y + 3x^2y$
-

2) Find the compound inequality that represents this graph.



- (A) $x > -3$ or $x < 2$ (B) $-3 < x < 2$ (C) $x < -3$ and $x > 2$
(D) $-3 \leq x \leq 2$ (E) $x < -3$ or $x > 2$
-

3) $(2x^4y^2)^3 =$

- (A) $6x^7y^5$ (B) $6x^{12}y^6$ (C) $8x^7y^5$ (D) $8x^{12}y^6$ (E) $8x^{12}y^5$
-

4) If $3x + 6 = 0$, what is the value of $x + 7$?

- (A) -11 (B) -9 (C) -2 (D) 5 (E) 9
-

5) $(y^2 - 6y + 2) - (3y^2 + 7y - 1) =$ (A) $-2y^2 + y + 1$ (B) $-2y^2 - 13y + 1$

- (C) $-2y^2 - y + 3$ (D) $-2y^2 + y - 3$ (E) $-2y^2 - 13y + 3$
-

6) $\frac{(x^2y^3)^5}{x^7y^9} =$

- (A) x^3y^6 (B) $x^{17}y^{24}$ (C) x^0y^{-1} (D) x^3y^{17} (E) $x^{14}y^6$
-

7) One solution of $(x - 5)(3x + 4) = 0$ is

- (A) -5 (B) $-\frac{4}{3}$ (C) $-\frac{3}{4}$ (D) $\frac{4}{3}$ (E) $\frac{3}{4}$

Answers

1 E

2 E

3 D

4 D

5 E

6 A

2015

8) One factor of $3x^2 - x - 2$ is

- (A) $x + 1$ (B) $3x - 2$ (C) $x - 2$ (D) $3x + 1$ (E) $3x + 2$
-

9) If $\begin{cases} x + 2y = 5 \\ 3x - 2y = 7 \end{cases}$, then $x =$

- (A) 12 (B) 3 (C) 8 (D) 4 (E) 16
-

10) $\sqrt{48} - \sqrt{12} =$

- (A) 2 (B) $\sqrt{3}$ (C) $2\sqrt{3}$ (D) $4\sqrt{3}$ (E) 6
-

11) Factor completely: $3x^2 - 75$

- (A) $3(x^2 - 25)$ (B) $(x + 5)(x - 5)$ (C) $(3x + 5)(x - 5)$ (E) $3(x + 5)(x - 5)$
-

12) $\frac{x^2 - 9}{x + 2} \div \frac{x^2 + x - 6}{x^2 - 4} =$

- (A) $x - 3$ (B) $x + 3$ (C) $x + 2$ (D) $x - 2$ (E) 1
-

13) If $\frac{3}{x-1} = 2$, then $x =$

- (A) $\frac{3}{5}$ (B) $\frac{5}{3}$ (C) 2 (D) $\frac{5}{2}$ (E) 3
-

14) $\frac{x^{-5}y^9}{(x^{-2}y^2)^{-3}} =$

- (A) $\frac{x^{11}}{y^{15}}$ (B) $\frac{y^3}{x}$ (C) xy^3 (D) $\frac{y^{15}}{x^{11}}$ (E) $\frac{y^{15}}{x}$
-

15) If $y = 3x$ and $4x - 2y = 5$, then $x =$

- (A) $-\frac{15}{2}$ (B) $-\frac{5}{2}$ (C) $\frac{11}{6}$ (D) $\frac{5}{2}$ (E) $\frac{15}{2}$

Answers

- 7 B
- 8 E
- 9 B
- 10 C
- 11 E
- 12 A
- 13 D
- 14 D
- 15 B

2015

16) Find the common denominator of: $\frac{3}{2x-4} + \frac{x}{x+2}$

- (A) $2(x+2)(x-2)$ (B) $(x+2)(x-2)$ (C) $2x-4$ (D) $x-2$
-

17) Rationalize the denominator (reduce fraction to lowest terms): $\sqrt{\frac{7}{8}}$

- (A) $\frac{\sqrt{120}}{8}$ (B) $\sqrt{\frac{14}{16}}$ (C) $\frac{\sqrt{14}}{4}$ (D) $\sqrt{\frac{120}{64}}$ (E) $\frac{\sqrt{14}}{8}$
-

18) Solve: $\frac{x^2}{x-5} + \frac{25}{5-x} = -2$

- (A) $\{-7, 5\}$ (B) $\{7, -5\}$ (C) $\{7\}$ (D) $\{-7\}$ (E) no solution
-

19) If point A(3, 1) and B(2, -3), what is the slope of line AB?

- (A) 4 (B) -4 (C) $\frac{1}{4}$ (D) $-\frac{1}{4}$ (E) undefined
-

20) Factor: $2ac + ad + 6bc + 3bd$ (A) $(2c+d)(a+3b)$

- (B) $2a(c) + d(a+3b) + b$ (C) $2ac + ad + 6cd + 3d^2$ (D) $5abcd$
-

21) Which equation is parallel to $y = 3x$?

- (A) $y - 3x = 2$ (B) $3x + y = 0$ (C) $3y = x$ (D) $3y - x = 2$
-

22) Divide using long division: $(6x^2 - x - 4) \div (2x + 1)$

- (A) $3x - 2 - \frac{2}{2x+1}$ (B) $3x + 1 - \frac{3}{2x+1}$ (C) $3x - 2$ (D) $3x - 2 - \frac{6}{2x+1}$

Answers

16 A

17 C

18 D

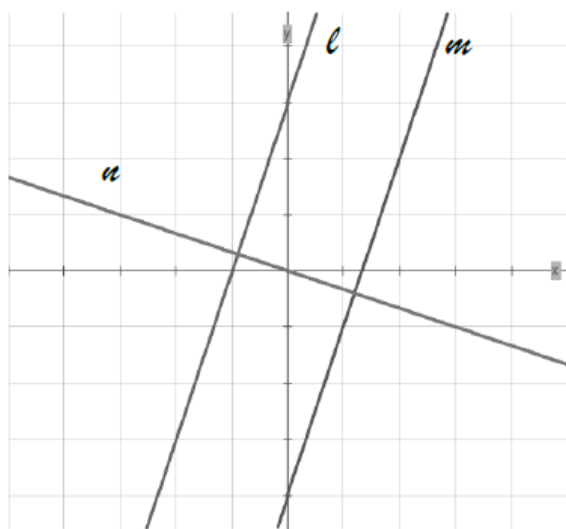
19 A

20 A

21 A

22 A

For problems #23 – 25, use the graph below.



23) The equation for line ℓ is:

(A) $y = 3x - 4$ (B) $y = 3x + 3$

(C) $y = 3x$ (D) $y = 3x - 1$

24) The equation for line a is:

(A) $y = -\frac{1}{3}x$ (B) $y = -\frac{1}{3}x + 3$

(C) $-\frac{1}{3}x + y = 0$ (D) $-\frac{1}{3}x - y = 2$

25) Which statement is true for lines ℓ , m , and a ?

(A) ℓ is perpendicular to m (B) ℓ is parallel to a

(C) m is parallel to a (D) ℓ is parallel to m

26) Solve: $n^3 + 2n^2 - 35n = 0$

(A) $\{-7, 0, 5\}$ (B) $\{-5, 0, 7\}$ (C) $\{-5, 7\}$ (D) $\{-7, 5\}$

27) Factor completely: $6x^2 + 20x - 16$ (A) $(x + 4)(6x - 4)$

(B) $(2x + 4)(3x + 4)$ (C) $2(3x - 2)(x + 4)$ (D) $2(3x + 4)(x + 2)$

28) Solve: $x^2 - 8x + 11 = 0$

(A) $8 \pm \sqrt{5}$ (B) $4 \pm 2\sqrt{5}$ (C) $8 \pm 2\sqrt{5}$ (D) $4 \pm \sqrt{5}$ (E) $-4 \pm \sqrt{5}$

29) If y varies directly as x and $y = 28$ and $x = 18$, find y when $x = 9$.

(A) 56 (B) 14 (C) 18 (D) 28 (E) 9

Answers

23 B

24 A

25 D

26 A

27 C

28 D

29 B

2015

30) Simplify: $5\sqrt{8}(2\sqrt{18}+3\sqrt{10})$

- (A) $120+\sqrt{5}$ (B) $120+6\sqrt{5}$ (C) $120+60\sqrt{5}$ (D) $120+15\sqrt{5}$
-

31) For $\frac{a+bt}{c} = m$, solve for t .

- (A) $\frac{cm-a}{b}$ (B) $\frac{cm+a}{b}$ (C) $\frac{cm-b}{a}$ (D) $\frac{cm}{b}-a$
-

32) If $f(x) = x^2 - 3x + 5$, find $f(a+2)$

- (A) $a^2 + a - 3$ (B) $a^2 - 3a + 3$ (C) $a^2 + a + 9$ (D) $a^2 + a + 3$
-

33) Simplify: $\sqrt{45x^{16}y^7}$

- (A) $9x^6y^3\sqrt{5y}$ (B) $3x^8y^3\sqrt{5y}$ (C) $9x^4y^3\sqrt{5y}$ (D) $9x^6y^3\sqrt{5}$
-

34) Solve: $|x+3|=5$

- (A) $\{2\}$ (B) $\{-8\}$ (C) $\{2, 8\}$ (D) $\{-2, 8\}$ (E) $\{2, -8\}$
-

35) Solve: $\sqrt{8x+1}-5=0$

- (A) 25 (B) 24 (C) 3 (D) 26 (E) 5

Answers

30 C

31 A

32 D

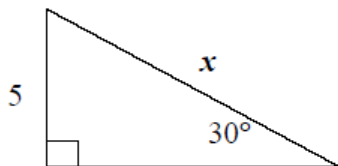
33 B

34 E

35 C

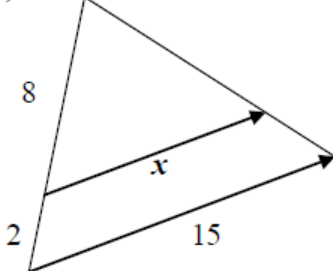
2015

36) Find x .



- (A) 30 (B) 60
(C) 5 (D) 10
(E) not enough information
-

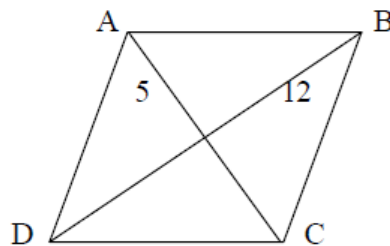
37) Find x



- (A) 60 (B) 12
(C) 9 (D) 5
(E) not enough information
-

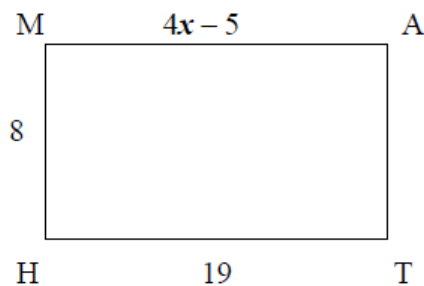
38) ABCD is a rhombus. Find its perimeter.

- (A) 48 (B) 20
(C) 68 (D) 52
(E) not enough information

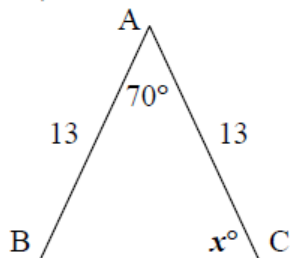


39) MATH is a rectangle. Find x

- (A) 19 (B) 6
(C) 24 (D) 8
(E) not enough information



40) ABC is an isosceles triangle. Find x



- (A) 110° (B) 70°
(C) 180° (D) 55°
(E) not enough information

Answers

36. D

37. B

38. D

39. B

40. D

2015

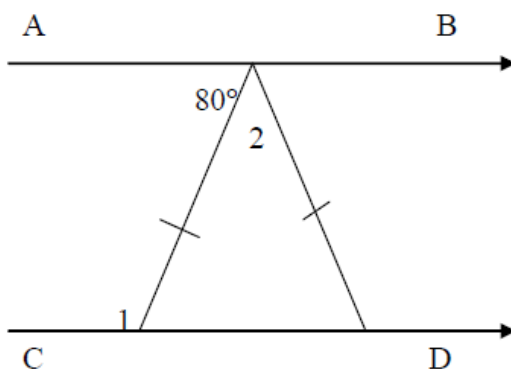
For problems #41 – 42, use the diagram: $AB \parallel CD$

41) Find the measure of angle 1.

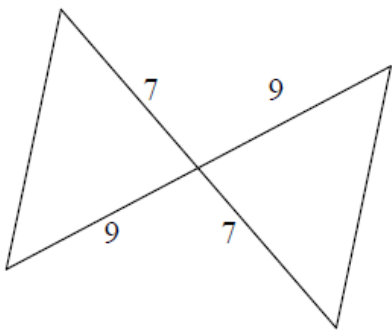
- (A) 100° (B) 80°
(C) 20° (D) 160°

42) Find the measure of angle 2.

- (A) 100° (B) 80°
(C) 20° (D) 160°

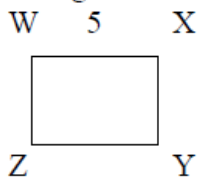
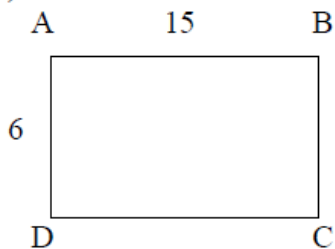


43) What congruence postulate could be used to prove that the 2 triangles are congruent?



- (A) AAS (B) ASA
(C) SSS (D) SAS
(E) the triangles are not congruent

44) $ABCD \sim WXYZ$ and are similar rectangles. Find the perimeter of $WXYZ$.



- (A) 42 (B) 14 (C) 21 (D) 30 (E) not enough information

Answers

41 A

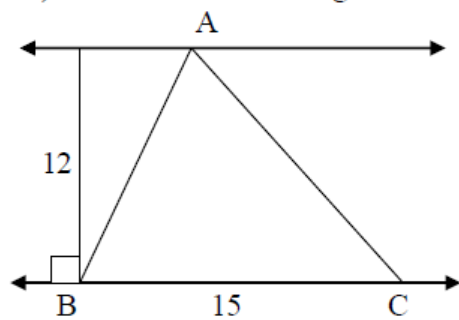
42 C

43 D

44 B

2015

45) Find the area of triangle ABC.

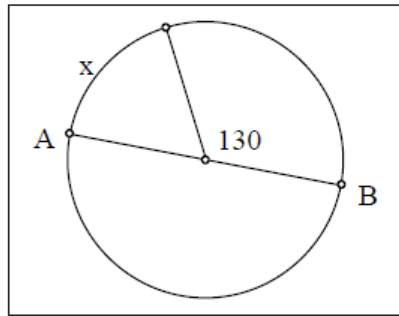


- (A) 180 (B) 225
(C) 144 (D) 90
(E) not enough information

46) Find the geometric mean between 6 and 18.

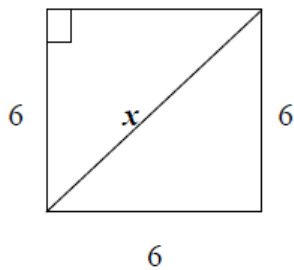
- (A) 108 (B) $6\sqrt{3}$ (C) $9\sqrt{3}$ (D) $6\sqrt{2}$ (E) $36\sqrt{3}$

47) Find x , AB is the diameter.



- (A) 130° (B) 180°
(C) 50° (D) 360°
(E) not enough information

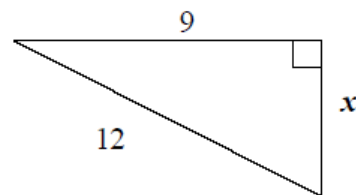
48) Find x



- (A) 24 (B) $6\sqrt{2}$
(C) 36 (D) 72
(E) not enough information

49) Find x

- (A) $3\sqrt{7}$ (B) 63
(C) $9\sqrt{7}$ (D) $3\sqrt{6}$



Answers

45 D

46 B

47 C

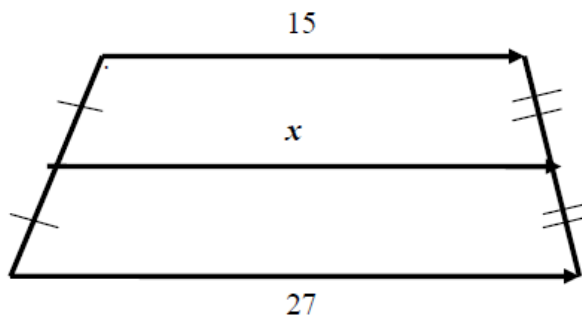
48 B

49 A

2015

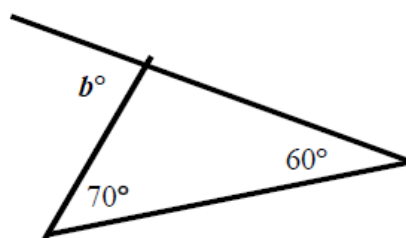
50) Find x .

- (A) 34 (B) 17
(C) 21 (D) 16



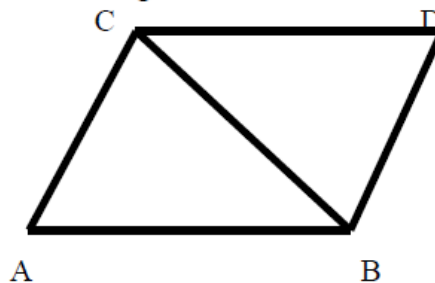
51) Find the degree measure of angle b .

- (A) 50° (B) 130°
(C) 135° (D) 140°



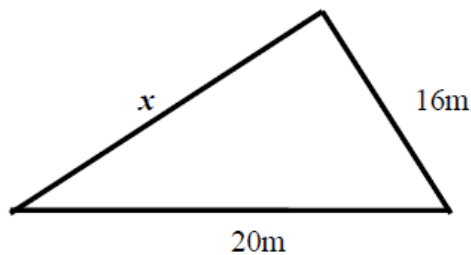
52) In parallelogram ACDB, angle ABD = 112° and angle ABC = 47° . What is the measure angle ACB?

- (A) 68° (B) 45°
(C) 47° (D) 65°



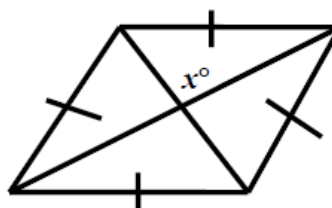
53) In this triangle, the length of x must be $__ < x < __$.

- (A) 4m, 36m (B) 36m, 4m
(C) 5m, 35m (D) 35m, 5m



54) Find angle x .

- (A) 30° (B) 60°
(C) 90° (D) 120°



Answers

50 C

51 B

52 D

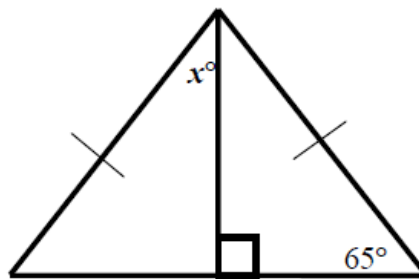
53 A

54 C

2015

55) Find angle x .

- (A) 10° (B) 25°
(C) 40° (D) 80°

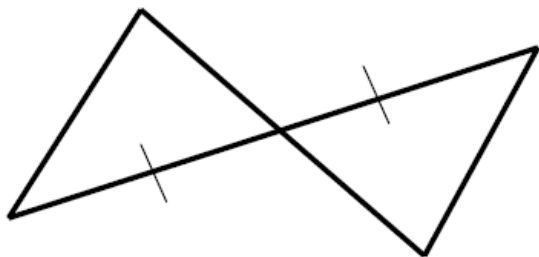


For problems #56 – 59, state how the triangles can be proven congruent. If none, state so.

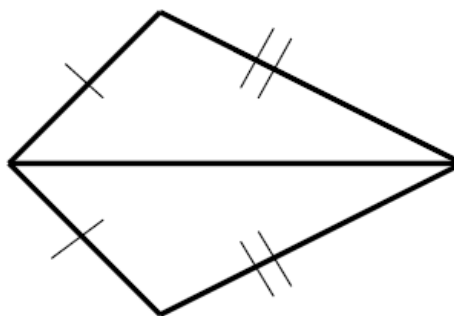
Mark (A) SAS for $\cong \Delta s$ (B) SSS for $\cong \Delta s$ (C) ASA for $\cong \Delta s$

- (D) HL for $\cong \Delta s$ (E) none

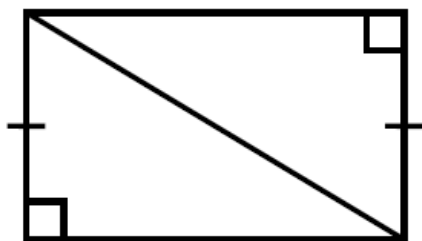
56)



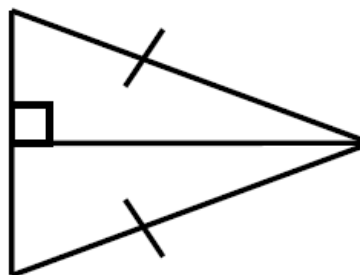
57)



58)

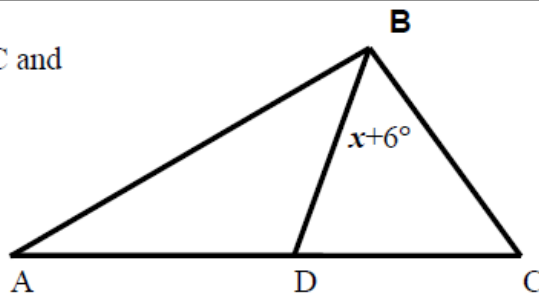


59)



60) Find x if BD is an angle bisector of $\angle ABC$ and $m\angle ABC = 4x - 6$

- (A) 9 (B) 3
(C) 15 (D) 6



Answers

55 B

56 E

57 B

58 D

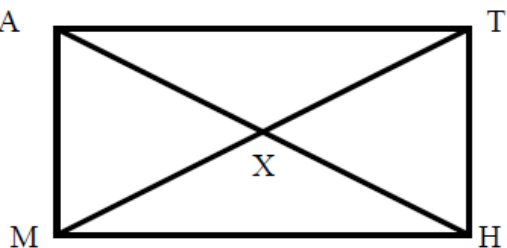
59 D

60 A

2015

- 61) Find MT if $MX = 4x + 5$ and $XT = 2x + 11$. A MATH is a rectangle.

- (A) 3 (B) 17
(C) 34 (D) 8

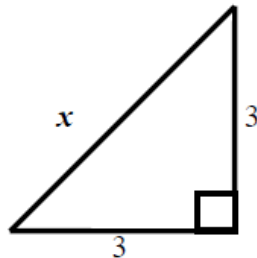


- 62) Suppose polygon **P** is similar to polygon **Q**, and that the ratio of similarity of **Q** to **P** is 3. If **P** has a perimeter of 15 m, what is the perimeter of **Q**?

- (A) 45 m (B) 5 m (C) 9 m (D) 27 m

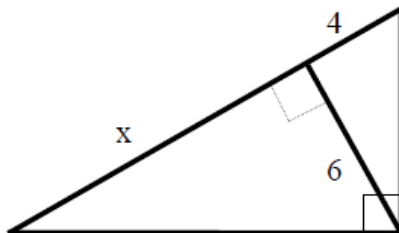
- 63) Find x .

- (A) 3 uts (B) $3\sqrt{2}$ uts
(C) 6 uts (D) $\frac{3\sqrt{2}}{2}$ uts



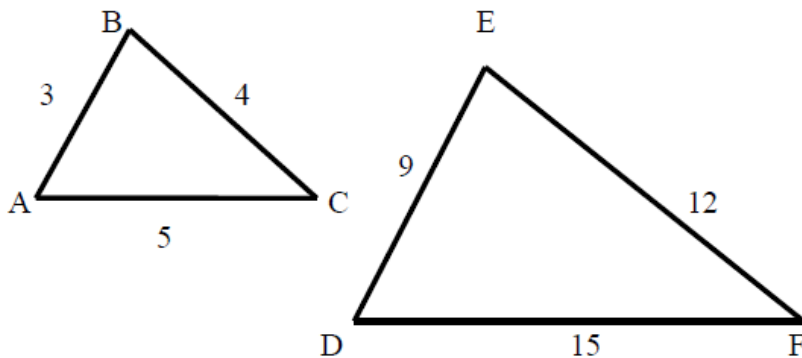
- 64) Find x .

- (A) 9 ft (B) $6\sqrt{3}$ ft
(C) 12 ft (D) $12\sqrt{3}$ ft



- 65) Find the ratio of similarity of $\triangle ABC$ to $\triangle DEF$.

- (A) 3
(B) 1:3
(C) 4:9
(D) 1:5



Answers

61 C

62 A

63 B

64 A

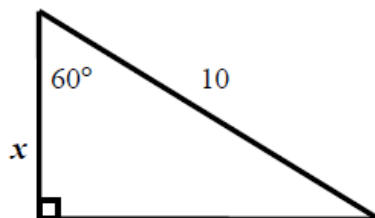
65 B

2015

66) Find x .

(A) 5 (B) 10

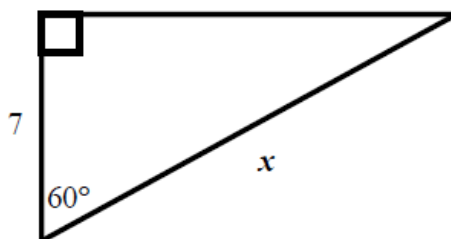
(C) 15 (D) 20



67) Find x .

(A) 14 (B) 7

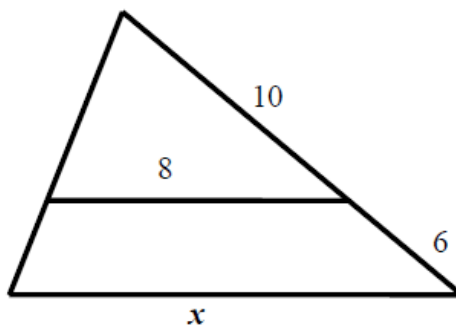
(C) 3.5 (D) 60



68) Find x .

(A) 12.8 (B) 4.8

(C) 16 (D) 6.8



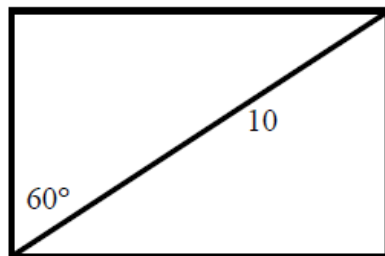
69) Find the geometric mean between 8 and 18.

(A) 8 (B) 18 (C) 13 (D) 12

70) Find the perimeter of the rectangle.

(A) $5 + 5\sqrt{3}$ (B) $10\sqrt{3}$

(C) $10 + 10\sqrt{3}$ (D) $20\sqrt{3}$



Answers

66 A

67 A

68 A

69 D

70 C