

Problem Set

1. $B = 20^\circ$

2. $C = 30^\circ$

3. 1930 bulbs

4. 150 men

5. $\frac{a^4 b^2}{9}$

6. $\frac{-37}{4}$

7. $-4ab^3 + 2b$

8. $\frac{-3a^2 n^2}{b} + \frac{1}{nb^2}$

9. $x = \frac{7}{2}$

10. -5

11. $\frac{3x+6+x^2}{x(x+2)}$

12. $3x^3 + 5x^2 + 5x + 2$

13. $x = 30, y = 10$

14. Two line segments are congruent if the segments have equal length.

15. $M = 48^\circ, S = 84^\circ$

16. $x = 8$

17. $9\sqrt{2} \text{ m}^2$

18. 4.19 inches

19. $\sqrt{\frac{1}{16}} + \sqrt{\frac{1}{36}} > \sqrt{\frac{1}{16} + \frac{1}{36}}$; Therefore the answer is A.

20. Therefore the answer is B.

Problem Set

1. $X = 60^\circ$
2. Apples = 9, Oranges = 14
3. Sandwiches = 3520, Burgers = 2240
4. $8x^7y^{-4}$
5. -1
6. $9w^2z - 7wz^2$
7. $k^2l^2m - kl^2$
8. $a = 4$
9. -17
10. $4a^3 - a^2b - 9ab^2 + 5b^3$
11. $c = -10, d = 40$
12. $m = \frac{65}{7}, n = \frac{110}{21}$
13. $Z = 112$
14. A scalene triangle is a triangle which has sides of all different lengths.
15. $k = 120^\circ, a = 20^\circ$
16. $x = \frac{81}{2}$
17. 251.2 cm^2

18. 28 m

19. 44.56 m³

20. $\sqrt{\frac{9}{16}} + \sqrt{\frac{25}{49}} > \sqrt{\frac{9}{16} + \frac{25}{49}}$

Therefore, the answer is A.

Problem Set

1. $B = 30^\circ$
2. 900 people
3. obtuse triangle
4. $p = 3, q = 15, r = 12$
5. $p = 8, q = 20, r = 21$
6. $6s^7 t^{-7}$
7. $a = \frac{30}{17}, b = \frac{-147}{17}$
8. $x = 0$
9. $\frac{10a-24}{a(a-4)(a-2)}$
10. $2a^5 - a^4 + 2a^3 + 2a^2 + 3$
11. $\frac{6}{5} + \frac{12}{b^6 c^4 a^2}$
12. 29
13. $x = 8$
14. 4.19 m^2
15. 3.44 m^2
16. 41.42 m

17. 48 m^3

18. 56.52 cm^3

19. $8^{23} - 8^{22} = 8^{22}(7)$

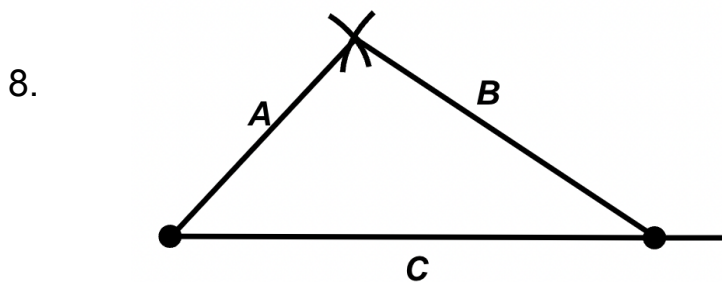
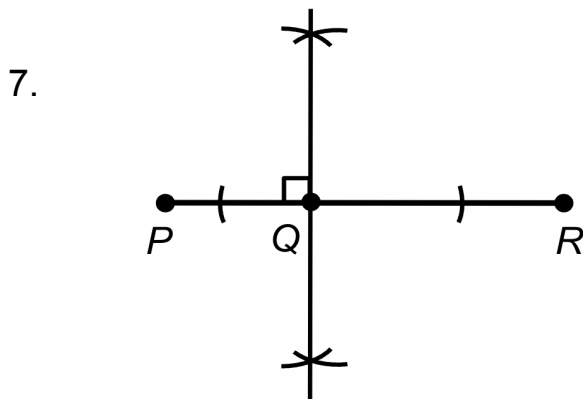
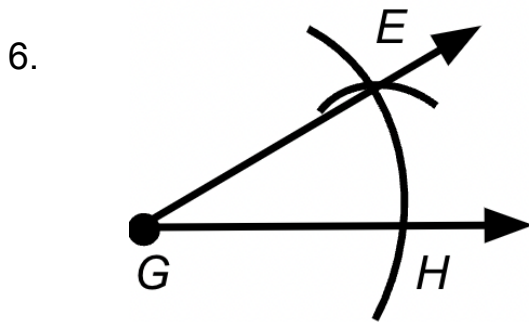
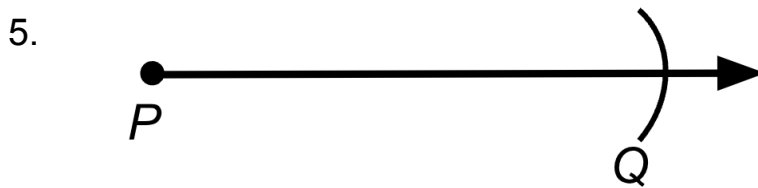
Therefore, the answer is C.

20. $64\pi > 32\pi$

Therefore, the answer is A.

Problem Set

1. $B = 30^\circ$
2. 5418 swimmers
3. Number of dimes = 11, Number of quarters = 9
4. obtuse triangle



9. $a = 24, b = 0$

10. $x = \frac{4}{3}$

11. $\frac{-4a^2 + 5a + 4}{a^2(a+1)}$

12. 88

13. $a = \frac{16}{3}, b = \frac{15}{2}$

14. $p = 8, q = 16, r = 20$

15. $x = \frac{15}{4}$

16. 62.28 cm

17. Volume 200.96 m^3 , Area = 485.07 m^2

18. 48 m^3

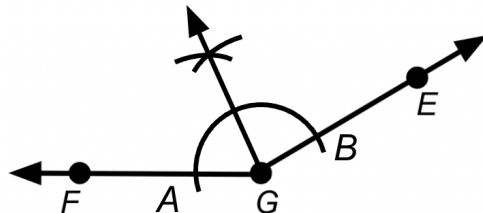
19. $\angle P < m \angle R$

The greater the angle, the greater the length of the segment opposite it, Since $\angle R$ is greater than $\angle P$, the segment PQ is greater than segment QR. Therefore the answer is A.

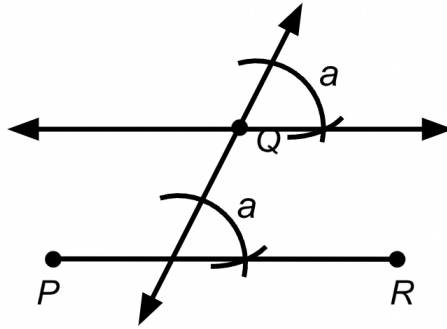
20. Since $z > 1$, the value of the denominator must be positive. However, since the value of the numerator depends on the value of w , which can be positive or negative, we cannot determine the sign. Therefore the answer is D.

Problem Set

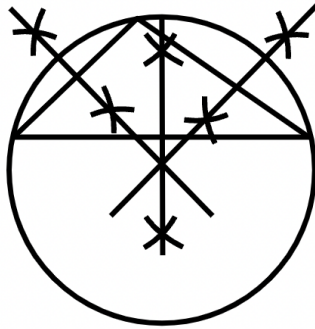
1. $\theta = 49^\circ$
2. 434 grams
3. Oranges = 12, Apples = 27
4. $\frac{4}{9}$
5. $\sqrt[4]{a^7} b \sqrt[4]{b^3}$
6. $a^{\frac{11}{4}} \sqrt{b}$
7. $c^{\frac{a+6}{2}}$
8. $2 + 2\sqrt{2}\sqrt{x} + x$
9. $(15 + 2\sqrt{3})i$
10. $\frac{7}{\sqrt{2}} - 5\sqrt{\frac{3}{2}} + 14\sqrt{3}$
11. $a = 2, k = 32$
12. $PQ = \sqrt{52 + s^2}$
13. 39.36 cm^2
14. 2.36 in^2 .
- 15.



16.



17.

18. 84.16 m^3

19. Both b and c are greater than 1, $2bc$ must be positive. Therefore the answer is A.

20. Both A and B are equal. Therefore the answer is C.

Problem Set

1. Number of pinks = 30, Number of whites = 80

2. $B = 4^\circ$

3. obtuse triangle

4. $x = 26$

5. $a = 16$

6. $a = 10$

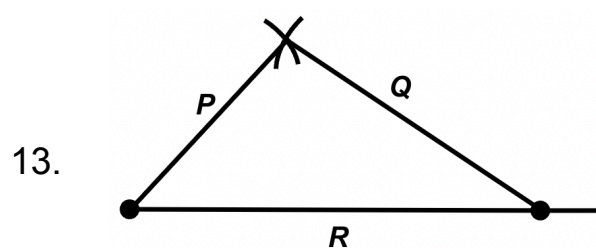
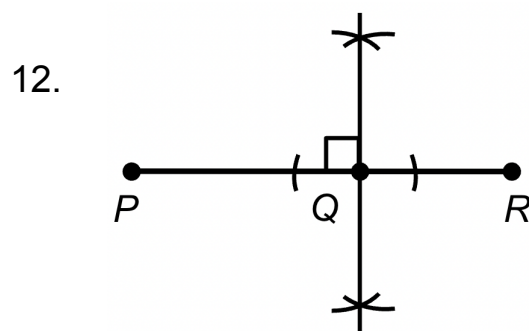
7. $a = 1, b = -1, c = 2$

8. $d^{\frac{59}{15}} c^{\frac{8}{15}}$

9. $\frac{-23\sqrt{15}}{15}$

10. $-2 + (-2 - 3\sqrt{3})i$

11. $PR = \sqrt{77}$



14. $p = \frac{32}{7}, q = \frac{21}{2}$

15. $r = \sqrt{70}, q = 3\sqrt{14}, h = \sqrt{45}$

16. 100.48 m^2

17. 224 cm^3

18. 34.86 m^2

19. A and B are equal. Therefore the answer is C.

20. A and B are equal. Therefore the answer is C.

Problem Set

1. If the animal is a bear, then it is a large animal.
2. If the student is a maths student, then the student is intelligent.
3. If an animal is a bear, then it is not blue.
4. If the coach is not happy, then the team did not win.
5. The argument is invalid.
6. Number of pink = 80, Number of white = 200

7. $a = \frac{39}{40}$, $b = \frac{9}{40}$, $c = \frac{53}{40}$

8. $x = 104$

9. $x = 73$

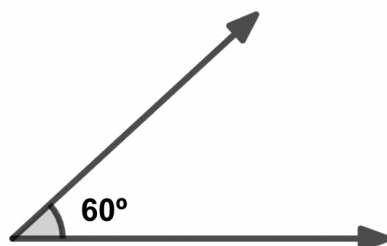
10. $3 + 2\sqrt{3}\sqrt{x} + x$

11. $\frac{y + x^2}{xy^2}$

12. $6 - 7i$

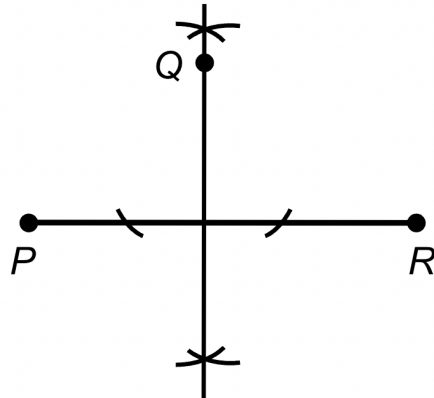
13. $a + 2a^{\frac{1}{2}}b^{\frac{1}{2}} + b$

14.



15. $p = 9\sqrt{2}$, $q = 4\sqrt{2}$, $h = 4$

16.



17. 11.87 cm^2

18. 36m^2

19. The only case where $-y = y$ is when y is equal to zero. Zero is less than 1, therefore the answer is B.

20. A and B are equal. Therefore, the answer is C.