Finding the Place Value of Whole and Decimal Numbers

Helpful Video

Place Value
https://www.youtube.com/watch?v=T5Qf0qSSJFI

Exercises

Underline or Circle the Indicated Place Value

1. 25,450	digit in thousands place
2. 87,947,221	digit in ten millions place
3. 26,769	digit in ten thousands place
4. 189,078	digit in hundred thousands place
5. 132.7160888	digit in 4th decimal place
6. 92.765	digit representing whole number
7. 993.83419	digit in ten-thousandths place
8. 321.40023	digit in 3rd decimal place
9. 17.543	digit in hundredths place
10. 9,956,595,171	digit in hundred millions place
11. 1,639	digit in hundreds place
12. 45,007,103	digit in millions place
13. 45.480	digit in 2nd decimal place
14. 248.40402	digit in thousandths place
15. 455.458	digit in 1st decimal place

16. 93.5943	digit in tenths place	
17. 7,915	digit in tens place	

Answers

1. 25,450	digit in thousands place	2**5**,450
2. 87,947,221	digit in ten millions place	**8**7,947,221
3. 26,769	digit in ten thousands place	**2**6,769
4. 189,078	digit in hundred thousands place	**1**89,078
5. 132.7160888	digit in 4th decimal place	132.716**0**888
6. 92.765	digit representing whole number	9**2**.765
7. 993.83419	digit in ten-thousandths place	993.8341**9**
8. 321.40023	digit in 3rd decimal place	321.40**0**23
9. 17.543	digit in hundredths place	17.5**4**3
10. 9,956,595,171	digit in hundred millions place	9,**9**56,595,171
11. 1,639	digit in hundreds place	1,**6**39
12. 45,007,103	digit in millions place	4**5**,007,103
13. 45.480	digit in 2nd decimal place	45.4**8**0
14. 248.40402	digit in thousandths place	248.40**4**02
15. 455.458	digit in 1st decimal place	455.**4**58
16. 93.5943	digit in tenths place	93.**5**943
17. 7,915	digit in tens place	7,9**1**5

Rounding Whole and Decimal Numbers

Helpful Video

Rounding
https://www.youtube.com/watch?v=LGRoPAPMZhA

Exercises

Round each number to the indicated place value.

1. 40,037	nearest ten thousand
2. 4.14601	nearest thousandth
3. 696.181	two decimal places
4. 44.32	nearest whole number
5. 657	nearest hundred
6. 42,398,655	nearest ten million
7. 959,854,964	nearest hundred million
8. 99,791	nearest thousand
9. 23.632479	four decimal places
10. 7.37	nearest tenth
11. 769.93	one decimal place
12. 6.011822	nearest ten-thousandth
13. 13,887,830	nearest million
14. 234,405	nearest hundred thousand
15. 331.1394	nearest hundredth
16. 6.302617	three decimal places
17. 22	nearest ten

Answers

1. **4**0,037	nearest ten thousand	**40,000**
2. 4.14**6**01	nearest thousandth	**4.146**
3. 696.1**8**1	two decimal places	**696.18**
4. 4**4**.32	nearest whole number	**44**
5. **6**57	nearest hundred	**700**
6. **4**2,398,655	nearest ten million	**40,000,000**
7. **9**59,854,964	nearest hundred million	**1,000,000,000**
8. 9**9**,791	nearest thousand	**100,000**
9. 23.632**4**79	four decimal places	**23.6325**
10. 7.**3**7	nearest tenth	**7.4**
11. 769.**9**3	one decimal place	**769.9**
12. 6.011**8**22	nearest ten-thousandth	**6.0118**
13. 1**3**,887,830	nearest million	**14,000,000**
14. **2**34,405	nearest hundred thousand	**200,000**
15. 331.1**3**94	nearest hundredth	**331.14**
16. 6.30**2**617	three decimal places	**6.303**
17. **2**2	nearest ten	**20**

Order of Operations

Helpful Video

https://www.youtube.com/watch?v=ClYdw4d4OmA

Exercises

1.	$10\cdot\sqrt{36}-3(10+5)$
2.	9^2+11-3
3.	$12\cdot 7^2+\frac{0}{5}$
4.	$25\cdot 2+2(6-3)+8$
5.	$6\sqrt{121}-10\cdot 6$
6.	$173-97+44$
7.	$143-52+28-36$
8.	$(89-11)+(107-7)$
9.	$(29-9+1)^2-(5+11-9)^3$
10.	$120\div 4\cdot 5\cdot 3\div(15-9)$

Answers

1.	$10\cdot\sqrt{36}-3(10+5)$ $=10\cdot 6-3(15)$ $=60-45$ $=15$
2.	9^2+11-3 $=81+11-3$ $=92-3$ $=89$
3.	$12\cdot 7^2+\frac{0}{5}$ $=12\cdot 49+0$ $=588$

4. $25 \cdot 2 + 2(6-3) + 8$
$= 50 + 2(3) + 8$
$= 50 + 6 + 8$
$= 64$

5. $6\sqrt{121} - 10 \cdot 6$
$= 6 \cdot 11 - 10 \cdot 6$
$= 66 - 60$
$= 6$

6. $173 - 97 + 44$
$= 76 + 44$
$= 120$

7. $143 - 52 + 28 - 36$
$= 91 + 28 - 36$
$= 119 - 36$
$= 83$

8. $(89-11) + (107-7)$
$= (78) + (100)$
$= 178$

9. $(29 - 9 + 1)^2 - (5 + 11 - 9)^3$
$= (21)^2 - (7)^3$
$= 441 - 343$
$= 98$

10. $120 \div 4 \cdot 5 \cdot 3 \div (15-9)$
$= 120 \div 4 \cdot 5 \cdot 3 \div 6$
$= 30 \cdot 5 \cdot 3 \div 6$
$= 150 \cdot 3 \div 6$
$= 450 \div 6$
$= 75$

Finding Least Common Multiples and Least Common Denominators

Helpful Videos

https://www.youtube.com/watch?v=N-Y0Kvcnw8g
https://www.youtube.com/watch?v=pZEmFSP3Z0I

Exercises

1.	LCM(30 , 15) =
2.	LCM(8 , 16) =
3.	LCM(32 , 6 , 48) =
4.	LCM(42 , 12 , 28 , 3) =
5.	LCM(18 , 48 , 16) =
6.	LCD for: 3/20 , 3/5 , 1/2 , 1/4
7.	LCD for: 4/36 , 10/12 , 1/4
8.	LCD for: 3/4 , 11/14
9.	LCD for: 37/45 , 1/3 , 1/10
10.	LCD for: 11/15 , 3/9

Answers

1.	LCM(30 , 15) = 30 x 1 = **30** 15 x 2 = **30**	**30**
2.	LCM(8 , 16) = 16 x 1 = **16** 8 x 2 = **16**	**16**
3.	LCM(32 , 6 , 48) = 48 x 1 = 48 , 48 x 2 = **96** 32 x 3 = **96**	**96**

6 x 16 = **96**

4.	LCM(42 , 12 , 28 , 3) = 42 x 1 = 42 , 42 x 2 = **84** 12 x 7 = **84** 28 x 3 = **84** 3 x 28 = **84**	**84**
5.	LCM(18 , 48 , 16) = 48 x 1 = 48 , 48 x 2 = 96, 48 x 3 = **144** 8 x 18 = **144** 16 x 9 = **144**	**144**
6.	LCD for: 3/20 , 3/5 , 1/2 , 1/4 20 x 1 = **20** 5 x 4 = **20** 2 x 10 = **20** 4 x 5 = **20**	**20**
7.	LCD for: 4/36 , 10/12 , 1/4 36 x 1 = **36** 12 x 3 = **36** 4 x 9 = **36**	**36**
8.	LCD for: 3/4 , 11/14 14 x 1 = 14 , 14 x 2 = **28** 4 x 7 = **28**	**28**
9.	LCD for: 37/45 , 1/3 , 1/10 45 x 1 = 45 , 45 x 2 = **90** 3 x 30 = **90** 10 x 9 = **90**	**90**
10.	LCD for: 11/15 , 3/9 15 x 1 = 15 , 15 x 2 = 30 , 15 x 3 = **45** 9 x 5 = **45**	**45**

Fraction Operations

Helpful Video

https://www.youtube.com/watch?v=GvLIEiqxS6s

Exercises

Perform the indicated fraction operations and simplify the result, if necessary.

1.	$\frac{3}{7} \cdot \frac{7}{9}$
2.	$\frac{4}{13} \cdot \frac{13}{18}$
3.	$8 \times \frac{1}{2} \times \frac{3}{16}$
4.	$\frac{1}{3} \div \frac{3}{7}$
5.	$\frac{3}{5} \div \frac{1}{2}$
6.	$\frac{4}{9} \div \frac{28}{3}$
7.	$\frac{11}{20} - \frac{1}{10}$
8.	$\frac{6}{25} + \frac{1}{3}$
9.	$\frac{1}{3} - \frac{5}{21}$
10.	$\frac{11}{16} - \frac{5}{8}$
11.	$\frac{5}{24} + \frac{11}{24}$
12.	$\frac{5}{18} + \frac{7}{18} - \frac{3}{8}$

Answers

1.	$\frac{3}{7}\cdot\frac{7}{9} = \frac{3}{\cancel{7}}\cdot\frac{\cancel{7}}{9} = \frac{3^{\div 3}}{9^{\div 3}} = \frac{1}{3}$
2.	$\frac{4}{13}\cdot\frac{13}{18} = \frac{4}{\cancel{13}}\cdot\frac{\cancel{13}}{18} = \frac{4^{\div 2}}{18^{\div 2}} = \frac{2}{9}$
3.	$8\times\frac{1}{2}\times\frac{3}{16}$ $= \frac{8^{\div 8}}{1}\times\frac{1}{2}\times\frac{3}{16^{\div 8}} = \frac{1}{1}\times\frac{1}{2}\times\frac{3}{2} = \frac{3}{4}$
4.	$\frac{1}{3}\div\frac{3}{7} = \frac{1}{3}\times\frac{7}{3} = \frac{7}{9}$
5.	$\frac{3}{5}\div\frac{1}{2} = \frac{3}{5}\times\frac{2}{1} = \frac{6}{5}$
6.	$\frac{4}{9}\div\frac{28}{3}$ $= \frac{4}{9}\times\frac{3}{28} = \frac{4^{\div 4}}{9^{\div 3}}\times\frac{3^{\div 3}}{28^{\div 4}} = \frac{1}{3}\times\frac{1}{7} = \frac{1}{21}$
7.	$\frac{11}{20}-\frac{1}{10} = \frac{11}{20}-\frac{1}{10} = \frac{11}{20}-\frac{2}{20} = \frac{9}{20}$
8.	$\frac{6}{25}+\frac{1}{3} = \frac{6}{25}+\frac{1}{3} = \frac{18}{75}+\frac{25}{75} = \frac{43}{75}$
9.	$\frac{1}{3}-\frac{5}{21} = \frac{1}{3}-\frac{5}{21} = \frac{7}{21}-\frac{5}{21} = \frac{2}{21}$
10.	$\frac{11}{16}-\frac{5}{8} = \frac{11}{16}-\frac{10}{16} = \frac{1}{16}$
11.	$\frac{5}{24}+\frac{11}{24} = \frac{5}{24}+\frac{11}{24} = \frac{16^{\div 8}}{24^{\div 8}} = \frac{2}{3}$
12.	$\frac{5}{18}+\frac{7}{18}-\frac{3}{8} = \frac{20}{72}+\frac{28}{72}-\frac{27}{72} = \frac{21^{\div 3}}{72^{\div 3}} = \frac{7}{24}$

Percentage Problems

Helpful Video
https://www.youtube.com/watch?v=vd9TDGq6fLg&t=40s7

Exercises

1. 267.9 is what percent of 470?
2. 42% of what number gives 966?
3. 89% of 920 gives what amount?
4. 8,928 is what percent of 4,800?
5. 198% of what number gives 2,574?
6. 122% of 3,700 gives what amount?
7. 17.63 is what percent of 41?
8. 145% of what number gives 957?
9. 21% of 6,200 gives what amount?
10. 180 is what percent of 900?

Answers

1. 267.9 is what percent of 470?
267.9 = x(470) ; x = 267.9/470 = **57%**

2. 42% of what number gives 966?
(0.42)x = 966 ; x = 966/0.42 = **2300**

3. 89% of 920 gives what amount?
(0.89)(920) = x ; x = **818.8**

4. 8,928 is what percent of 4,800?
8,928 = x(4,800) ; x = 8,928/4,800 = 1.8 = **186%**

5. 198% of what number gives 2,574?

(1.98)x = 2,574 ; x = 2,574/1.98 = **1,300**

---

6. 122% of 3,700 gives what amount?
(1.22)(3,700) = x ; x = **4,514**

---

7. 17.63 is what percent of 41?
17.63 = x(41) ; x = 17.63/41 = 0.43 = **43%**

---

8. 145% of what number gives 957?
1.45x = 957 ; x = 957/1.45 = **660**

---

9. 21% of 6,200 gives what amount?
(0.21)(6,200) = x ; x = **1,302**

---

10. 180 is what percent of 900?
180 = x(900) ; x = 180/900 = 0.2 = **20%**

Solving Proportions

Helpful Video

https://www.youtube.com/watch?v=wT8tGc-SwKk

1. $\frac{46}{20}=\frac{X}{10}$
2. $\frac{X}{4892}=\frac{3}{1200}$
3. $\frac{1800}{11}=\frac{99}{A}$
4. $\frac{13}{1875}=\frac{Y}{120}$
5. $\frac{C}{2}=\frac{343}{14}$
6. $\frac{334}{40}=\frac{A}{2}$
7. $\frac{64}{8}=\frac{6}{B}$
8. $\frac{1092}{1280}=\frac{B}{12}$
9. $\frac{19}{Z}=\frac{200}{190}$
10. $\frac{X}{6}=\frac{202}{1500}$

Answers

1. $\frac{46}{20}=\frac{X}{10}$

20X = (46)(10) ; 20X = 460 ; **X = 23**

2. $\frac{X}{4892}=\frac{3}{1200}$

1200X = (4892)(3) ; 1200X = 14,676 ; **X = 12.23**

3. $\frac{1800}{11}=\frac{99}{A}$

1800A = (11)(99) ; 1800A = 1089 ; **A = 0.605**

4. $\frac{13}{1875}=\frac{Y}{120}$

1875Y = 13(120) ; 1875Y = 1560 ; **Y = 0.832**

---

5. $\frac{C}{2}=\frac{343}{14}$

14C = 2(343) ; 14C = 686 ; **C = 49**

---

6. $\frac{334}{40}=\frac{A}{2}$

40A = (334)(2) ; 40A = 668 ; **A = 16.7**

---

7. $\frac{64}{8}=\frac{6}{B}$

64B = (8)(6) ; 64B = 48 ; **B = 0.75**

---

8. $\frac{1092}{1280}=\frac{B}{12}$

1280B = (1092)(12) ; 1280B = 13,104 ; **B = 10.2375**

---

9. $\frac{19}{Z}=\frac{200}{190}$

200Z = (19)(190) ; 200Z = 3,610 ; **Z = 18.05**

---

10. $\frac{X}{6}=\frac{202}{1500}$

1500X = (6)(202) ; 1500X = 1,212 ; **X = 0.808**

Descriptive Statistics – Mean, Median, Range

Helpful Video

https://www.youtube.com/watch?v=A1mQ9kD-i9I

Exercises

dataset #1: 93 , 72 , 71 , 68 , 63 , 65 , 83 , 71
mean (rounded to 1 decimal place) =
median =
range =

---

dataset #2: 65 , 70 , 83 , 73 , 65 , 64 , 86
mean (rounded to 1 decimal place) =
median =
range =

---

dataset #3: 80 , 72 , 87 , 77 , 74 , 77 , 84
mean (rounded to 1 decimal place) =
median =
range =

---

dataset #4: 85 , 63 , 82 , 73 , 90 , 81 , 91 , 74
mean (rounded to 1 decimal place) =
median =
range =

---

dataset #5: 84 , 84 , 86 , 81 , 100 , 75 , 79 , 81
mean (rounded to 1 decimal place) =
median =
range =

---

dataset #6: 96 , 81 , 83 , 83 , 78 , 100 , 90
mean (rounded to 1 decimal place) =
median =

range =

---

dataset #7: 83 , 76 , 85 , 64 , 86 , 90 , 76

mean (rounded to 1 decimal place) =

median =

range =

---

dataset #8: 85 , 86 , 70 , 74 , 77 , 84 , 85 , 96

mean (rounded to 1 decimal place) =

median =

range =

---

dataset #9: 38 , 89 , 90 , 69 , 48 , 56 , 84 , 54

mean (rounded to 1 decimal place) =

median =

range =

---

dataset #10: 84 , 47 , 75 , 87 , 38 , 38 , 74

mean (rounded to 1 decimal place) =

median =

range =

Answers

dataset #1

93 , 72 , 71 , 68 , 63 , 65 , 83 , 71

sequential order: 63 65 68 71 71 72 83 93

mean = 586/8 = **73.3**

median = (71 + 71)/2 = **71**

range = 93 - 63 = **30**

---

dataset #2

65 , 70 , 83 , 73 , 65 , 64 , 86

sequential order: 64 65 65 70 73 83 86

mean = 506/7 = **72.3**

median = **70**

range = 86 - 64 = **22**

---

dataset #3
80 , 72 , 87 , 77 , 74 , 77 , 84
sequential order: 72 74 77 77 80 84 87
mean = 551/7 = **78.7**
median = **77**
range = 87 - 72 = **15**

---

dataset #4
85 , 63 , 82 , 73 , 90 , 81 , 91 , 74
sequential order: 63 73 74 81 82 85 90 91
mean = 639/8 = **79.9**
median = (81 + 82)/2 = **81.5**
range = 91 - 63 = **28**

---

dataset #5
84 , 84 , 86 , 81 , 100 , 75 , 79 , 81
sequential order: 75 79 81 81 84 84 86 100
mean = 670/8 = **83.8**
median = (81 + 84)/2 = **82.5**
range = 100 - 75 = **25**

---

dataset #6
96 , 81 , 83 , 83 , 78 , 100 , 90
sequential order: 78 81 83 83 90 96 100
mean = 611/7 = **87.3**
median = **83**
range = 100 - 78 = **22**

---

dataset #7
83 , 76 , 85 , 64 , 86 , 90 , 76
sequential order: 64 76 76 83 85 86 90
mean = 560/7 = **80**
median = **83**
range = 90 - 64 = **26**

---

dataset #8
85 , 86 , 70 , 74 , 77 , 84 , 85 , 96
sequential order: 70 74 77 84 85 85 86 96
mean = 657/8 = **82.1**
median = (84 + 85)/2 = **84.5**
range = 96 - 70 = **26**

---

dataset #9
38 , 89 , 90 , 69 , 48 , 56 , 84 , 54
sequential order: 38 48 54 56 69 84 89 90
mean = 528/8 = **66**
median = (56 + 69)/2 = **62.5**
range = 90 - 38 = **52**

---

dataset #10
84 , 47 , 75 , 87 , 38 , 38 , 74
sequential order: 38 38 47 74 75 84 87
mean = 443/7 = **63.3**
median = **74**
range = 87 - 38 = **49**

American Conversions

Helpful Video

https://www.youtube.com/watch?v=257TGWmxSv8

Exercises

1. 528 in = _____ ft
2. 208 cups = _____ gal
3. 32 yd = _____ ft
4. 34 tons = _____ lb
5. 40 gal = _____ pt
6. 41 mi = _____ ft
7. 608 oz = _____ lb
8. 24 qt = _____ fl oz
9. 1,774,080 in = _____ mi
10. 50 lb = _____ oz

Answers

1. $528\text{ in} \cdot \frac{1\text{ft}}{12\text{in}} = 528 \div 12 = 44\text{ ft}$

2. $208\text{ cups} \cdot \frac{1\text{pt}}{2\text{cups}} \cdot \frac{1\text{qt}}{2\text{pt}} \cdot \frac{1\text{gal}}{4\text{qt}} = 208 \div 16 = 13\text{ gal}$

3. $32\text{ yd} \cdot \frac{3\text{ft}}{1\text{yd}} = 32 \cdot 3 = 96\text{ ft}$

4. $34\text{ tons} \cdot \frac{2000\text{lb}}{1\text{ton}} = 34 \cdot 2000 = 68{,}000\text{ lb}$

5. $40\ \text{gal} \cdot \frac{4\,\text{qt}}{1\,\text{gal}} \cdot \frac{2\,\text{pt}}{1\,\text{qt}} = 40 \cdot 8 = 320\ \text{pt}$

6. $41\ \text{mi} \cdot \frac{5280\,\text{ft}}{1\,\text{mi}} = 41 \cdot 5280 = 216{,}480\ \text{ft}$

7. $608\ \text{oz} \cdot \frac{1\,\text{lb}}{16\,\text{oz}} = 608 \div 16 = 38\ \text{lb}$

8. $24\ \text{qt} \cdot \frac{2\,\text{pt}}{1\,\text{qt}} \cdot \frac{2\,\text{cups}}{1\,\text{pt}} \cdot \frac{8\,\text{fl oz}}{1\,\text{cup}} = 24 \cdot 32 = 768\ \text{fl oz}$

9. $1{,}774{,}080\ \text{in} \cdot \frac{1\,\text{ft}}{12\,\text{in}} \cdot \frac{1\,\text{mi}}{5280\,\text{ft}} = 1{,}774{,}080 \div 63{,}360 = 28\ \text{mi}$

10. $50\ \text{lb} \cdot \frac{16\,\text{oz}}{1\,\text{lb}} = 50 \cdot 16 = 800\ \text{oz}$

Metric Conversions

Helpful Video

https://www.youtube.com/watch?v=0ph73a6sguY

Exercises

1. 5.0101 mL = _____ dL
2. 34.8 cg = _____ mg
3. 28.13 m = _____ mm
4. 23411 cm = _____ m
5. 885.01 g = _____ hg
6. 0.14 kL = _____ daL
7. 7.502 kg = _____ dg
8. 4.4972 dam = _____ hm
9. 0.0038 hL = _____ L
10. 45.9 hg = _____ g

Answers

1. 5.0101 mL = _____ dL
   K H Da U **D** C **M** 5.0101 ÷ 100 = **0.050101 dL**
2. 34.8 cg = _____ mg
   K H Da U D **C** **M** 34.8 × 10 = **348 mg**
3. 28.13 m = _____ mm
   K H Da **U** D C **M** 28.13 × 1000 = **28,130 mm**
4. 23411 cm = _____ m
   K H Da **U** D **C** M 23,411 ÷ 100 = **234.11 m**
5. 885.01 g = _____ hg
   K **H** Da **U** D C M 885.01 ÷ 100 = **8.8501 hg**

6. 0.14 kL = _____ daL

K H **Da** U D C M 0.14 × 100 = **14 daL**

7. 7.502 kg = _____ dg

K H Da U **D** C M 7.502 × 10,000 = **75,020 dg**

8. 4.4972 dam = _____ hm

K **H** **Da** U D C M 4.4972 ÷ 10 = **0.44972 hm**

9. 0.0038 hL = _____ L

K **H** Da **U** D C M 0.0038 × 100 = **0.38 L**

10. 45.9 hg = _____ g

K **H** Da **U** D C M 45.9 × 100 = **4,590 g**

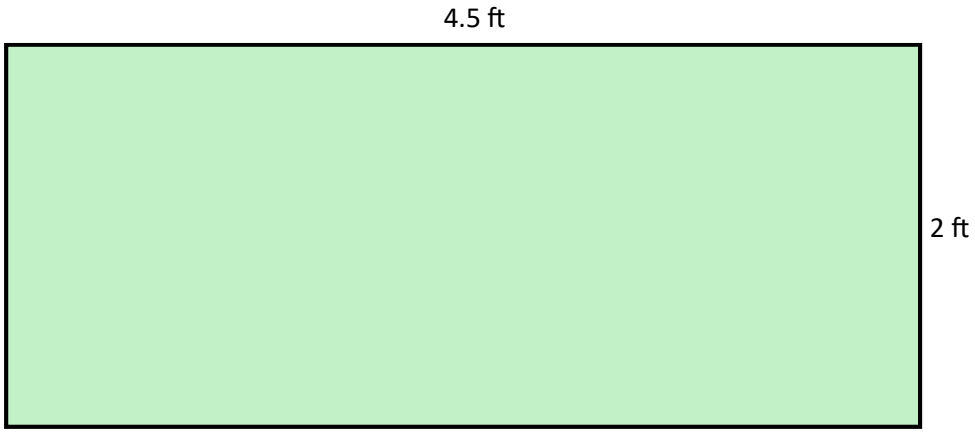
Geometry

Helpful Videos

https://www.youtube.com/watch?v=LpyzdO2fXtA
https://www.youtube.com/watch?v=BBzP196v4vM

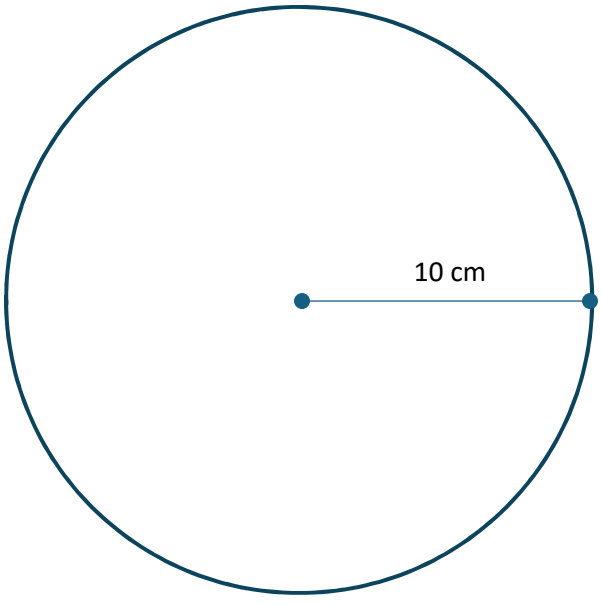
Exercises

1. For the rectangle given below, find the area.



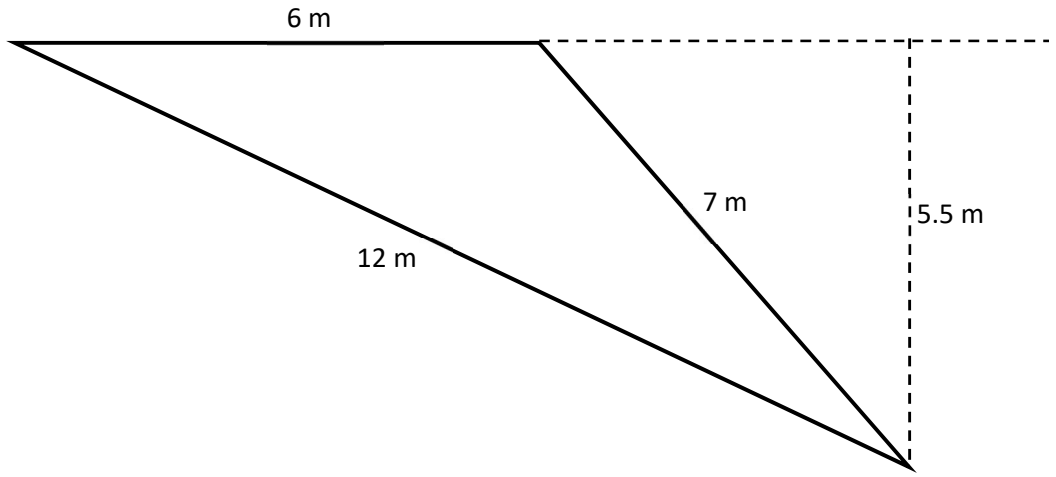
2. Find the perimeter of a rectangle with a length of 12 ft and a width of 9 ft.

3. For the circle given below, find its circumference.



4. Suppose a circle has a diameter of 6 inches. Find the area of the circle.

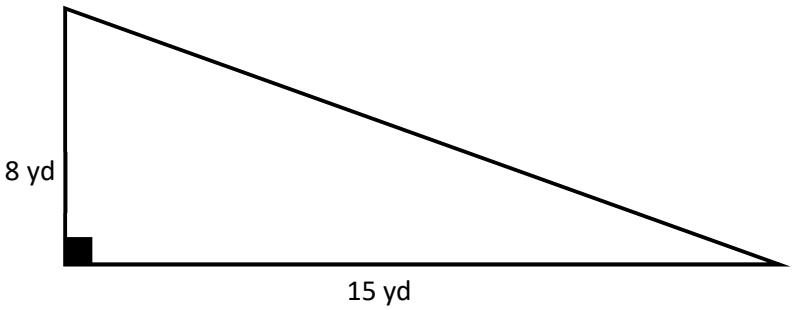
5. Find the perimeter of this triangle:



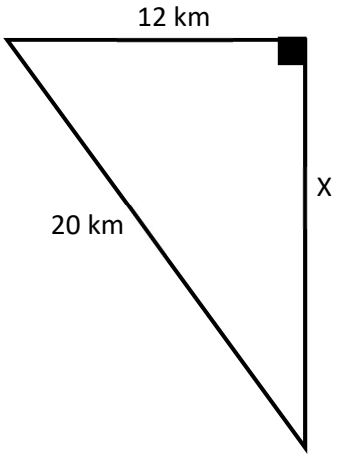
6. For the same rectangle given in exercise #5, find its area.

7. For a square that has a perimeter of 36 mm, find the area of the square.

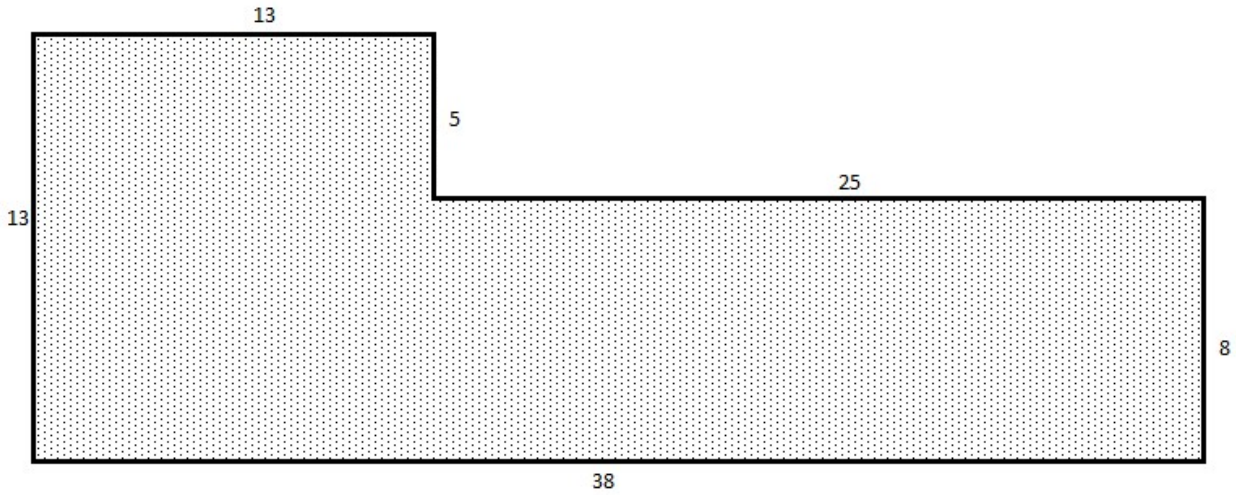
8. Find the length of the missing side in the right triangle below.



9. What is the length of the side marked by X in this right triangle?



10. Find the area of this polygon, assuming all lengths are given in feet.



Answers

1. A = L x W = (4.5 ft)(2 ft) = 9 ft^2

2. P = 2L + 2W = 2(12 ft) + 2(9 ft) = 42 ft

3. P = $2\pi r$ = 2(3.14)(10 cm) = 62.8 cm

4. diameter = 6 in, so radius = 3 in

$A = \pi r^2 = 3.14(3m)^2 = 3.14(9m^2) = 28.26m^2$

5. $P = 6\ m + 7\ m + 12\ m = 25m$

6. $A = \frac{1}{2}bh = \frac{1}{2}(6m)(5.5m) = 33m^2$

7. $P = 4s$; $36\ mm = 4s$; $s = 9\ mm$

$A = s^2 = (9mm)^2 = 81mm^2$

8.
$a^2 + b^2 = c^2$

$8^2 + 15^2 = c^2$

$64 + 225 = c^2$

$289 = c^2$

$c = \sqrt{289}$

$c = 17yd$

9.
$a^2 + b^2 = c^2$

$12^2 + X^2 = 20^2$

$144 + X^2 = 400$

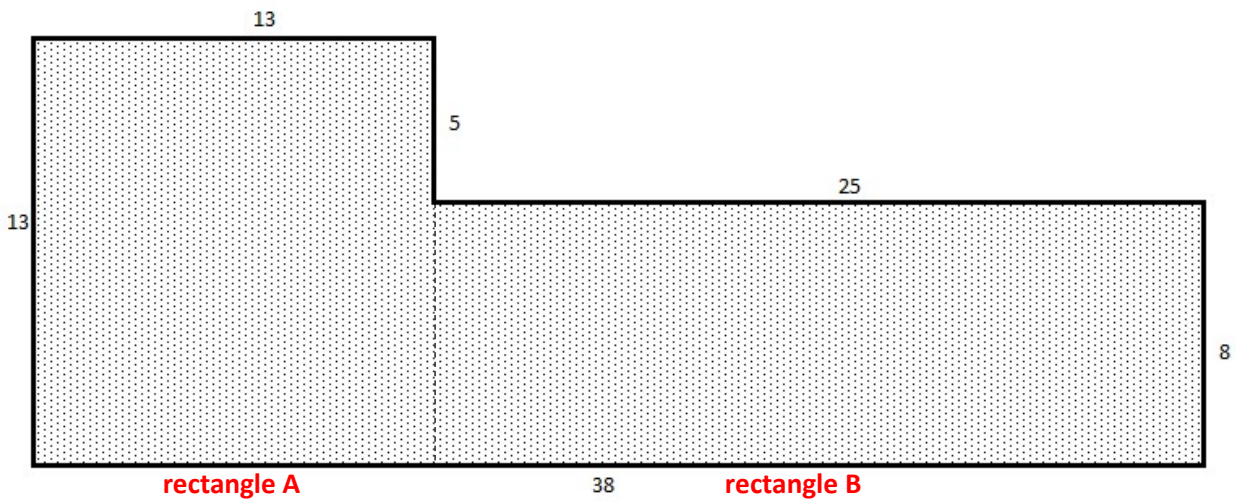
$X^2 = 400 - 144$

$X^2 = 256$

$X = \sqrt{256}$

$X = 16km$

10.



area of rectangle A = 13 ft x 13 ft = $169\,ft^2$

area of rectangle B = 25 ft x 8 ft = $200\,ft^2$

total area = $169\ ft^2 + 200\ ft^2 = 369\ ft^2$

Solving Linear Equations

Helpful Video

https://www.youtube.com/watch?v=kWOTmyoaWJg

Exercises

1. -1 + 11 + 13 = -9n + 2 + 2 - 10n
2. 5b - 6 + 8b + 9b = 4 + 264 - 10
3. 2 - 3h + 10 - 7h = 48 - 3 + 7
4. -3e - 10 + 5e - 3 = -7 + 4 + 8
5. -5n + 3n + 7 = -1 - 6 + 4
6. 3 - 7 + 10h - 8h = -13 - 1
7. 8 + 4u = 5u - 3 + 0
8. 3 - 2d = 2 - 64 - 7d
9. -9m + 7 + 9m = -4m - 6 - 3
10. 6d - 4d + 8 + 3 = d + 63 - 10 - 2d

Answers

1. -1 + 11 + 13 = -9n + 2 + 2 - 10n
23 = -19n + 4
19 = -19n
n = -1

2. 5b - 6 + 8b + 9b = 4 + 264 – 10
22b – 6 = 258
22b = 264
b = 12

3. 2 - 3h + 10 - 7h = 48 - 3 + 7
12 – 10h = 52
-10h = 40
h = -4

4. -3e - 10 + 5e - 3 = -7 + 4 + 8
2e – 13 = 5
2e = 18
e = 9

5. $-5n + 3n + 7 = -1 - 6 + 4$

$-2n + 7 = -3$

$-2n = -10$

$n = 5$

---

6. $3 - 7 + 10h - 8h = -13 - 1$

$-4 + 2h = -14$

$2h = -10$

$h = -5$

---

7. $8 + 4u = 5u - 3 + 0$

$8 + 4u = 5u - 3$

$4u - 5u = -3 - 8$

$-u = -11$

$u = 11$

---

8. $3 - 2d = 2 - 64 - 7d$

$3 - 2d = -62 - 7d$

$-2d + 7d = -62 - 3$

$5d = -65$

$d = -13$

---

9. $-9m + 7 + 9m = -4m - 6 - 3$

$7 = -4m - 9$

$7 + 9 = -4m$

$16 = -4m$

$m = -4$

---

10. $6d - 4d + 8 + 3 = d + 63 - 10 - 2d$

$2d + 11 = -d + 53$

$2d + d = 53 - 11$

$3d = 42$

$d = 14$
