Math Practice - Grade 7

M1 Add and subtract rational numbers

M1 7.NS.1, 7.NS.1a, 7.NS.1b, 7.NS.1c

Name: _____ Date: _____

Add and subtract integers, fractions, and decimals. Show a sum on a number line. Write a subtraction as adding the opposite. Find the distance between two numbers.

1 **15 - (-20) = ?**

2 **(-8) + 4 = ?**



3 **Work out -13 - (-9) by adding the opposite.**

Math Practice - Grade 7

M1 Add and subtract rational numbers

M1 7.NS.1, 7.NS.1a, 7.NS.1b, 7.NS.1c

Name: _____ Date: _____

Add and subtract integers, fractions, and decimals. Show a sum on a number line. Write a subtraction as adding the opposite. Find the distance between two numbers.

1 **10 + 20 = ?**

2 **9 + (-4) = ?**



3 **Rewrite 10 - 17 as adding the opposite.**

Math Practice - Grade 7

M1 Add and subtract rational numbers

M1 7.NS.1, 7.NS.1a, 7.NS.1b, 7.NS.1c

Name: _____ Date: _____

Add and subtract integers, fractions, and decimals. Show a sum on a number line. Write a subtraction as adding the opposite. Find the distance between two numbers.

1 **-1.432 - -0.261 = ?**

2 **5 + 4 = ?**



3 **Work out -6 - (-19) by adding the opposite.**

Math Practice - Grade 7

M2 Multiply and divide rational numbers, decimals, four operations

M2 7.NS.2, 7.NS.2a, 7.NS.2b, 7.NS.2c, 7.NS.2d, 7.NS.3

Name: _____ Date: _____

Multiply and divide signed fractions and decimals. Write a fraction as a decimal and say whether it repeats or ends. Solve the multi step problems.

1 **-1.6 / -0.2 = ?**

2 **Write 5/11 as a decimal. Does it terminate or repeat?**

$$\frac{5}{11} = \square$$

3 **(-8) + 6 x 9 = ?**

Math Practice - Grade 7

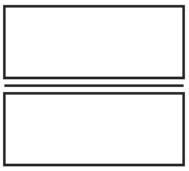
M2 Multiply and divide rational numbers, decimals, four operations

M2 7.NS.2, 7.NS.2a, 7.NS.2b, 7.NS.2c, 7.NS.2d, 7.NS.3

Name: _____ Date: _____

Multiply and divide signed fractions and decimals. Write a fraction as a decimal and say whether it repeats or ends. Solve the multi step problems.

1 **1/2 x 1/2 = ?**



2 **Write 4/5 as a decimal. Does it terminate or repeat?**

$$\frac{4}{5} = \square$$

3 **(2/4 + 1/2) x 8 = ?**



Math Practice - Grade 7

M2 Multiply and divide rational numbers, decimals, four operations

M2 7.NS.2, 7.NS.2a, 7.NS.2b, 7.NS.2c, 7.NS.2d, 7.NS.3

Name: _____ Date: _____

Multiply and divide signed fractions and decimals. Write a fraction as a decimal and say whether it repeats or ends. Solve the multi step problems.

1 **-7.8 x 3.7 = ?**

---

2 **Write 3/11 as a decimal. Does it terminate or repeat?**

$$\frac{3}{11} = \square$$

---

3 **(1/2 + 1/2) x 4 = ?**

Math Practice - Grade 7

M3 Ratios and proportional relationships

M3 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

Name: _____ Date: _____

Find a unit rate from a ratio of fractions. Test whether two ratios form a proportion. Complete the table and find the constant of proportionality. Write the equation and read the graph.

1 **A person walks 4/3 of a mile in 1/6 of an hour. What is the unit rate in miles per hour?**

$$\frac{4}{3} \quad / \quad \frac{1}{6} \quad = \quad \square$$

---

2 **Are 2/8 and 8/33 proportional?**

$$\frac{2}{8} \quad = \quad \frac{8}{33}$$

Yes | No

---

3 **Fill in the missing value in the ratio table.**

Hours	Miles
9	
18	2
27	3
36	4

Math Practice - Grade 7

M3 Ratios and proportional relationships

M3 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

Name: _____ Date: _____

Find a unit rate from a ratio of fractions. Test whether two ratios form a proportion. Complete the table and find the constant of proportionality. Write the equation and read the graph.

1 **A person walks 12/5 of a mile in 3/5 of an hour. What is the unit rate in miles per hour?**

$$\frac{12}{5} \quad / \quad \frac{3}{5} \quad = \quad \square$$

---

2 **Are 2/3 and 8/14 proportional?**

$$\frac{2}{3} \quad = \quad \frac{8}{14}$$

Yes | No

---

3 **Fill in the missing value in the ratio table.**

Cups of flour	Cups of sugar
	2
2	4
3	6
4	8

Math Practice - Grade 7

M3 Ratios and proportional relationships

M3 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d

Name: _____ Date: _____

Find a unit rate from a ratio of fractions. Test whether two ratios form a proportion. Complete the table and find the constant of proportionality. Write the equation and read the graph.

1 **A person walks 7/1 of a mile in 2/2 of an hour. What is the unit rate in miles per hour?**

$$\frac{7}{1} \quad / \quad \frac{2}{2} \quad = \quad \square$$

---

2 **Are 2/6 and 4/13 proportional?**

$$\frac{2}{6} \quad = \quad \frac{4}{13}$$

Yes No

---

3 **Fill in the missing value in the ratio table.**

Hours	Miles
3	
6	22
9	33
12	44

Math Practice - Grade 7

M4 Percent and proportional problem solving

M4 7.RP.3

Name: _____ Date: _____

Find the tax, tip, markup, or markdown and the total. Find the simple interest. Find the percent increase or decrease, and the percent error.

1 **A jacket costs 200. It is marked down by 30 percent. What is the sale price?**

Sale price ☐

---

2 **Ana puts 700 in a savings account. The simple interest rate is 20 percent per year. What is the total amount after 3 years?**

Total amount ☐

---

3 **A jacket costs 60. The price increases by 30 percent. What is the new price?**

New price ☐

Math Practice - Grade 7

M4 Percent and proportional problem solving

M4 7.RP.3

Name: _____ Date: _____

Find the tax, tip, markup, or markdown and the total. Find the simple interest. Find the percent increase or decrease, and the percent error.

1 **A jacket costs 120. It is marked down by 25 percent. What is the sale price?**

Sale price ☐

---

2 **Ana puts 400 in a savings account. The simple interest rate is 20 percent per year. What is the total amount after 5 years?**

Total amount ☐

---

3 **A jacket costs 40. The price decreases by 30 percent. What is the new price?**

New price ☐

Math Practice - Grade 7

M4 Percent and proportional problem solving

M4 7.RP.3

Name: _____ Date: _____

Find the tax, tip, markup, or markdown and the total. Find the simple interest. Find the percent increase or decrease, and the percent error.

1 **A shirt costs 100. Tax is 20 percent. What is the total cost?**

Total ☐

---

2 **Ana puts 1000 in a savings account. The simple interest rate is 20 percent per year. What is the total amount after 5 years?**

Total amount ☐

---

3 **A jacket costs 120. The price increases by 40 percent. What is the new price?**

New price ☐

Math Practice - Grade 7

M5 Equivalent expressions

M5 7.EE.1, 7.EE.2

Name: _____ Date: _____

Expand and factor linear expressions with rational coefficients. Combine the like terms. Rewrite a percent change as a single multiplier.

1 **Expand -3(2y + 9).**

2 **Factor 63x + 14.**

3 **Combine the like terms in the expression below.**

$2.5x + 0.5x + (-4.25) + 2.5 =$

4 **Rewrite a - 0.30a as a single term.**

5 **Expand -4(9x + 8).**

6 **Factor 30x - 15.**

7 **Combine the like terms in the expression below.**

$-0.75x + (-0.5)x + 2 + 1.75 =$

8 **Rewrite a + 0.50a as a single term.**

9 **Expand 1/2(14y - 10).**

10 **Factor 36x - 9.**

11 **Combine the like terms in the expression below.**

$0.25x + 1.25x + 3.5 + 2.25 =$

12 **Rewrite a - 0.40a as a single term.**

Math Practice - Grade 7

M5 Equivalent expressions

M5 7.EE.1, 7.EE.2

Name: _____ Date: _____

Expand and factor linear expressions with rational coefficients. Combine the like terms. Rewrite a percent change as a single multiplier.

1 **Expand 1/4(32x + 8).**

2 **Factor 16x + 16.**

3 **Combine the like terms in the expression below.**

$2x + 1x + (-4.75) + (-3.25) =$

4 **Rewrite a + 0.10a as a single term.**

5 **Expand 2/3(18x + 6).**

6 **Factor 18x - 6.**

7 **Combine the like terms in the expression below.**

$-2x + (-0.75)x + (-0.75) + 4.25 =$

8 **Rewrite a - 0.15a as a single term.**

9 **Expand -5(4y + 1).**

10 **Factor 9x - 27.**

11 **Combine the like terms in the expression below.**

$0.75x + (-0.25)x + (-1.5) + 3.75 =$

12 **Rewrite a - 0.30a as a single term.**

Math Practice - Grade 7

M5 Equivalent expressions

M5 7.EE.1, 7.EE.2

Name: _____ Date: _____

Expand and factor linear expressions with rational coefficients. Combine the like terms. Rewrite a percent change as a single multiplier.

1 **Expand 0.25(12y + 32).**

2 **Factor 24x - 54.**

3 **Combine the like terms in the expression below.**

$2.5x + 1x + 0 + 0.25 =$

4 **Rewrite a + 0.40a as a single term.**

5 **Expand 0.25(20y + 4).**

6 **Factor 24x - 32.**

7 **Combine the like terms in the expression below.**

$1.75x + (-2.5)x + (-0.75) + (-5) =$

8 **Rewrite a + 0.30a as a single term.**

9 **Expand 0.25(16y + 8).**

10 **Factor 32x - 4.**

11 **Combine the like terms in the expression below.**

$2x + 1x + (-2.75) + (-1.25) =$

12 **Rewrite a + 0.25a as a single term.**

Math Practice - Grade 7

M6 Equations and inequalities

M6 7.EE.3, 7.EE.4, 7.EE.4a, 7.EE.4b

Name: _____ Date: _____

Solve the two step equations. Solve the word problems. Write and graph the inequality on the number line.

1 **Solve 9x + 6 = 15.**

x = ☐

---

2 **Solve 4(x + 1) = 36.**

x = ☐

---

3 **Leo saves 2 every week and already has 10 saved. He wants 26. How many weeks must he save? x = weeks**

2x + 10 = 26, x = ☐

Math Practice - Grade 7

M6 Equations and inequalities

M6 7.EE.3, 7.EE.4, 7.EE.4a, 7.EE.4b

Name: _____ Date: _____

Solve the two step equations. Solve the word problems. Write and graph the inequality on the number line.

1 **Solve 11x + 17 = 72.**

x = ☐

---

2 **Solve 8(x + 4) = 80.**

x = ☐

---

3 **A plumber charges a 8 call out fee plus 3 per hour. The bill is 17. How many hours did the job take? x = hours**

3x + 8 = 17, x = ☐

Math Practice - Grade 7

M6 Equations and inequalities

M6 7.EE.3, 7.EE.4, 7.EE.4a, 7.EE.4b

Name: _____ Date: _____

Solve the two step equations. Solve the word problems. Write and graph the inequality on the number line.

1 **Solve 8x + 7 = 47.**

x = ☐

---

2 **Solve 9(x + 2) = 81.**

x = ☐

---

3 **Leo saves 6 every week and already has 17 saved. He wants 71. How many weeks must he save? x = weeks**

6x + 17 = 71, x = ☐

Math Practice - Grade 7

M7 Geometry: scale drawings and construction

M7 7.G.1, 7.G.2, 7.G.3

Name: _____ Date: _____

Find the actual length or area from the scale drawing. Find the scale factor. Decide whether the sides or angles make one triangle, more than one, or no triangle. Name the shape made by slicing the solid.

1 **Scale: 1 inch = 8 meters. The drawing is 20 in by 14 in. Find the actual length of the width.**

Scale: 1 inch = 8 meters



Actual length ☐

---

2 **A shape is enlarged by a scale factor of 3. The original side is 4 inches long. How long is the copy side?**

Copy length ☐

---

3 **Two sides are 10 and 9, and the angle opposite the side of length 10 is 60 degrees. Circle One triangle, More than one triangle, or No triangle. Write one reason on the line.**



One triangle | More than one triangle | No triangle

Reason: _____

Math Practice - Grade 7

M7 Geometry: scale drawings and construction

M7 7.G.1, 7.G.2, 7.G.3

Name: _____ Date: _____

Find the actual length or area from the scale drawing. Find the scale factor. Decide whether the sides or angles make one triangle, more than one, or no triangle. Name the shape made by slicing the solid.

1 **Scale: 1 inch = 4 feet. The drawing is 20 in by 18 in. Find the actual area.**

Scale: 1 inch = 4 feet



Actual area _____

---

2 **A drawing is 4 inches long. The real object is 8 feet long. What is the scale? Write it as 1 inch = ? feet.**

1 inch = _____

---

3 **Three angles are 115, 42, and 23 degrees. Circle One triangle, More than one triangle, or No triangle. Write one reason on the line.**

115 degrees



42 degrees



23 degrees



One triangle | More than one triangle | No triangle

Reason: _____

Math Practice - Grade 7

M7 Geometry: scale drawings and construction

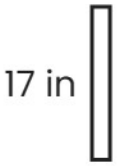
M7 7.G.1, 7.G.2, 7.G.3

Name: _____ Date: _____

Find the actual length or area from the scale drawing. Find the scale factor. Decide whether the sides or angles make one triangle, more than one, or no triangle. Name the shape made by slicing the solid.

1 **Scale: 1 inch = 9 meters. The drawing is 2 in by 17 in. Find the actual length of the height.**

Scale: 1 inch = 9 meters



Actual length ☐

---

2 **A drawing is 4 inches long. The real object is 24 feet long. What is the scale? Write it as 1 inch = ? feet.**

1 inch = ☐

---

3 **Three angles are 38, 74, and 68 degrees. Circle One triangle, More than one triangle, or No triangle. Write one reason on the line.**



One triangle | More than one triangle | No triangle

Reason: _____

Math Practice - Grade 7

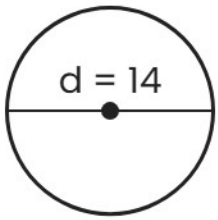
M8 Geometry: circles, angles, area and volume

M8 7.G.4, 7.G.5, 7.G.6

Name: _____ Date: _____

Find the circumference and the area of the circle. Find the unknown angle. Find the area and the volume of the composite figure.

1 **Find the area of the circle. The diameter is 14. Use pi = 3.14.**

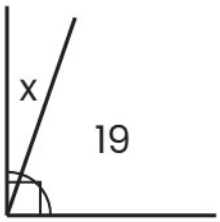


Area ☐

Use pi = 3.14

---

2 **Find the unknown angle x.**



x = ☐

---

3 **Find the area of the shape.**



Area ☐

Math Practice - Grade 7

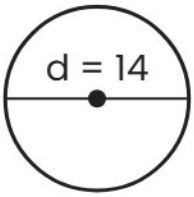
M8 Geometry: circles, angles, area and volume

M8 7.G.4, 7.G.5, 7.G.6

Name: _____ Date: _____

Find the circumference and the area of the circle. Find the unknown angle. Find the area and the volume of the composite figure.

1 Find the circumference of the circle. The diameter is 14. Use pi = 22/7.

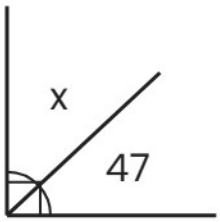


Circumference ☐

Use pi = 22/7

---

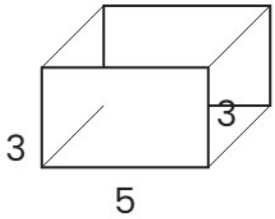
2 Find the unknown angle x.



x = ☐

---

3 Find the surface area of the prism.



Surface area ☐

Math Practice - Grade 7

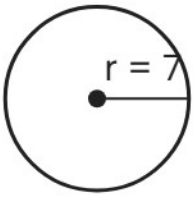
M8 Geometry: circles, angles, area and volume

M8 7.G.4, 7.G.5, 7.G.6

Name: _____ Date: _____

Find the circumference and the area of the circle. Find the unknown angle. Find the area and the volume of the composite figure.

1 Find the circumference of the circle. The radius is 7. Use pi = 22/7.

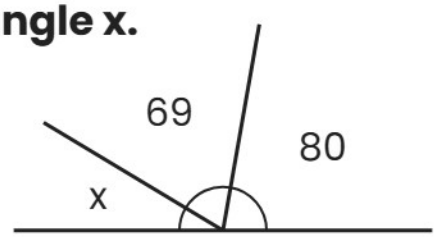


Circumference ☐

Use pi = 22/7

---

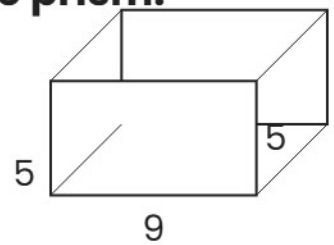
2 Find the unknown angle x.



x = ☐

---

3 Find the volume of the prism.



Volume ☐

Math Practice - Grade 7

M9 Statistics: sampling and comparing populations

M9 7.SP.1, 7.SP.2, 7.SP.3, 7.SP.4

Name: _____ Date: _____

Tell whether the sample is representative or biased. Use the sample to estimate the population value. Compare the two populations by center and by spread.

1 **A librarian asks every 10th student who walks into the library about reading. Is the sample representative or biased?**

Representative	Biased

---

2 **A survey asked 20 students. 11 chose pizza. The school has 220 students. About how many students in the school chose pizza?**

Estimate ☐

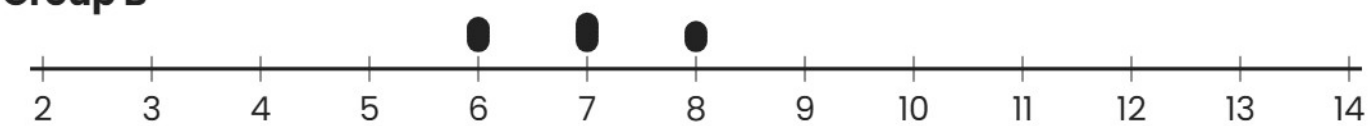
---

3 **Which group has the greater spread?**

Group A



Group B



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Math Practice - Grade 7

M9 Statistics: sampling and comparing populations

M9 7.SP.1, 7.SP.2, 7.SP.3, 7.SP.4

Name: _____ Date: _____

Tell whether the sample is representative or biased. Use the sample to estimate the population value. Compare the two populations by center and by spread.

1 **Maya asks her 10 best friends what sport the school should offer. Is the sample representative or biased?**

Representative | Biased

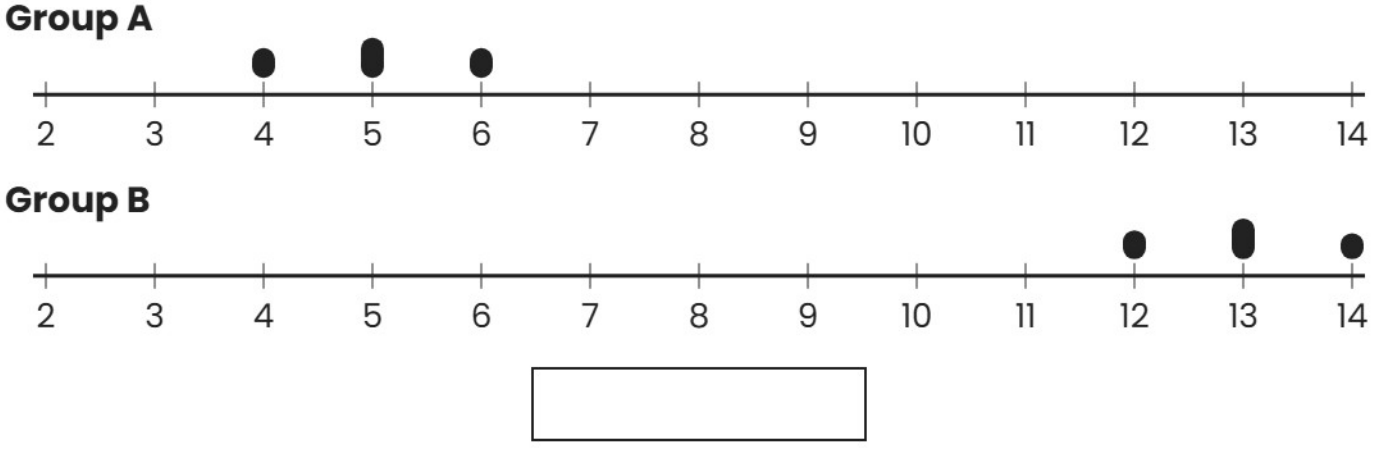
---

2 **The lengths of 12 words are 3, 7, 3, 6, 4, 4, 3, 7, 3, 2, 5, 7. Estimate the mean word length. Round to the nearest whole number.**

Estimate ☐

---

3 **Do the two groups overlap a lot or a little?**



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Math Practice - Grade 7

M9 Statistics: sampling and comparing populations

M9 7.SP.1, 7.SP.2, 7.SP.3, 7.SP.4

Name: _____ Date: _____

Tell whether the sample is representative or biased. Use the sample to estimate the population value. Compare the two populations by center and by spread.

1 **A survey picks 30 students at random from all grades to ask about homework. Is the sample representative or biased?**

Representative | Biased

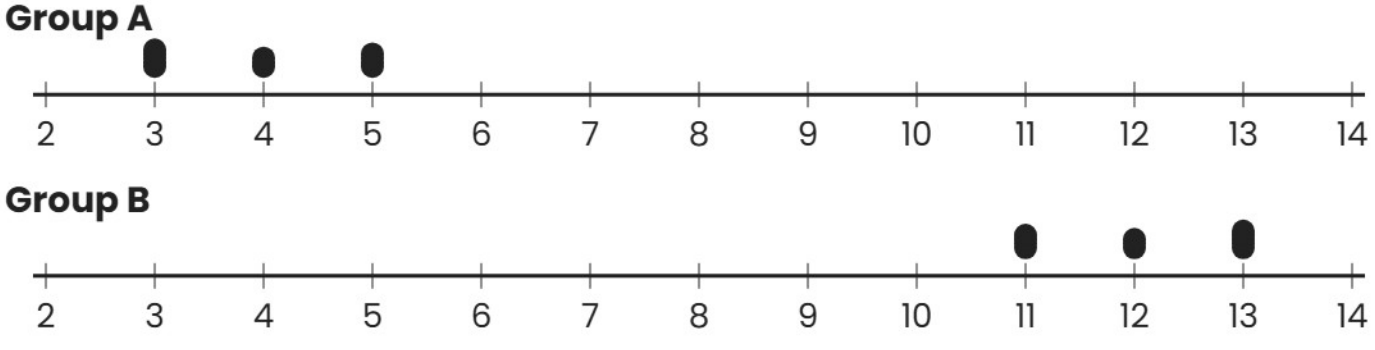
---

2 **The lengths of 12 words are 6, 5, 9, 9, 4, 4, 4, 6, 5, 9, 5, 9. Estimate the mean word length. Round to the nearest whole number.**

Estimate ☐

---

3 **Do the two groups overlap a lot or a little?**



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Math Practice - Grade 7

M10 Probability

M10 7.SP.5, 7.SP.6, 7.SP.7, 7.SP.7a, 7.SP.7b, 7.SP.8, 7.SP.8a, 7.SP.8b, 7.SP.8c

Name: _____ Date: _____

Give the likelihood as a number from 0 to 1. Compare the experimental and the theoretical probability. Build a probability model. Find the probability of a compound event.

1 **An event has probability 0.25. How likely is it?**

Impossible	Unlikely
Even chance	Likely
Certain	

---

2 **A number cube is rolled 200 times. About how many times will an even number come up?**

About ☐

---

3 **A paper cup was tossed 20 times. It landed open end down 14 times. About what is the probability it lands open end down?**

$$P = \frac{\square}{\square}$$

Math Practice - Grade 7

M10 Probability

M10 7.SP.5, 7.SP.6, 7.SP.7, 7.SP.7a, 7.SP.7b, 7.SP.8, 7.SP.8a, 7.SP.8b, 7.SP.8c

Name: _____ Date: _____

Give the likelihood as a number from 0 to 1. Compare the experimental and the theoretical probability. Build a probability model. Find the probability of a compound event.

1 **A coin is tossed. What is the probability of heads?**

$$P = \frac{\square}{\square}$$

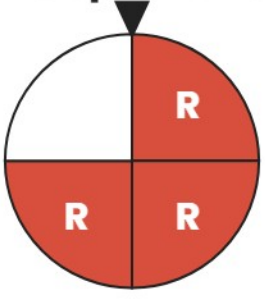
---

2 **A number cube is rolled 120 times. About how many times will a 3 or a 6 come up?**

About $\square$

---

3 **What is the probability the spinner lands on red?**



$\frac{\square}{\square}$

Math Practice - Grade 7

M10 Probability

M10 7.SP.5, 7.SP.6, 7.SP.7, 7.SP.7a, 7.SP.7b, 7.SP.8, 7.SP.8a, 7.SP.8b, 7.SP.8c

Name: _____ Date: _____

Give the likelihood as a number from 0 to 1. Compare the experimental and the theoretical probability. Build a probability model. Find the probability of a compound event.

1 **An event has probability 0.5. How likely is it?**

Impossible	Unlikely
Even chance	Likely
Certain	

---

2 **A number cube is rolled 200 times. About how many times will an even number come up?**

About ☐

---

3 **A paper cup was tossed 20 times. It landed open end down 12 times. About what is the probability it lands open end down?**

$$P = \frac{\square}{\square}$$