1. *(12)* Identify the property illustrated.

$(16 + 17) + 3 = 16 + (17 + 3)$

2. *(9)* Compare the expressions when $x = 3$ and $y = 2$. Use <, >, or =.

$x^2 + y^3 \bigcirc x^2y^2$

3. *(6)* Find the difference $-4.1 - (-5.6)$.

4. *(Inv. 1)* Lily spun a game spinner and recorded the results in the table below.

Outcome	Frequency
1	7
2	5
3	8

What is the probability of landing on 1? on 2? on 3? Express each probability as a fraction in simplest form and a percent.

Simplify problems 5–10.

5. *(11)* $(-9)(-0.6)$

6. *(11)* -4^3

7. *(15)* $6(7 - 2)$

8. *(15)* $-2(3 + 5)$

9. *(3)* $\left(\frac{1}{7}\right)^2$

10. *(10)* $-\frac{1}{8} + \frac{5}{8} - \left(-\frac{3}{8}\right) - \frac{7}{8}$

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11. *(14)* In a bag, there are 10 tiles numbered as follows: 1, 1, 2, 2, 2, 3, 4, 4, 4, and 4. A tile is randomly chosen from the bag. What is the probability of drawing a tile with a number less than 4?

12. *(13)* Is 48 a perfect square? Explain.

13. *(12)* Tell whether the statement $a = 0 \cdot a$ is true or false. Justify your answer using properties. Assume a is a real number.

14. *(Inv. 1)* Describe the following event as impossible, unlikely, as likely as not, likely, or certain: Jane rolls an even number on a number cube labeled 1–6.

15. *(1)* Identify the subset of real numbers to which $2\sqrt{5}$ belongs.

16. *(5)* Find the sum $(-12) + (-7)$.

17. *(4)* A rectangular rug is 2.5 feet by 2 feet. Its area is $(2.5 \cdot 2)$ square feet. A circular rug has a radius of 2 feet. Its area is approximately $3.14 \cdot 2^2$ square feet. What is the combined area of the two rugs?

18. *(8)* Kelly rows a boat at the rate of 7040 yards per hour. How fast did Kelly row in miles per hour?

19. *(14)* A number cube labeled 1–6 is rolled. List the outcomes for the event that a number greater than 5 is rolled.

20. *(13)* Estimate the value of $\sqrt{17}$ to the nearest integer.

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NAME: Alg Std, G. 3 TEST: _____

SCORE: _____

1. Parenthesis moved, but numbers didn't. Associative Property of Addition

2. x^2+y^3 ○ x^2y^2 , $x=3$, $y=2$

3^2+2^3 ○ $3^2 2^2$

$9+8$ ○ $9 \cdot 4$

17 < 36

3. $-4.1-(-5.6)$

$-4.1+5.6 = 1.5$

4.

1	7	$\frac{7}{20}$
2	5	$\frac{5}{20} \div 5$
3	8	$\frac{8}{20} \div 4 =$

total = 20 spins

$P(1) = \frac{7}{20}$, 35%

$P(2) = \frac{1}{4}$, 25%

$P(3) = \frac{2}{5}$, 40%

5. $(-9) \cdot (-0.6) = 5.4$

6. $-4^3 = -4 \cdot 4 \cdot 4$

$= -64$

7. $6 \cdot (7-2)$

$6 \cdot (5) = 30$

8. $-2(3+5)$

$-2(8) = -16$

9. $\left(\frac{1}{7}\right)^2 = \frac{1}{7} \cdot \frac{1}{7} = \frac{1}{49}$

10. $-\frac{1}{8}+\frac{5}{8}-\left(-\frac{3}{8}\right)-\frac{7}{8}$

$\frac{4}{8}+\frac{3}{8}-\frac{7}{8}$

$\frac{7}{8}-\frac{7}{8} = 0$

11. 1, 1, 2, 2, 2, 3, 4, 4, 4, 4

$P(\text{less than } 4) = \frac{6}{10} = \frac{3}{5}$ or 60%

12. No, the square root of 48 is not a whole number

13. $a = 0 \cdot a$

False, in order to be true, it needs to be $0 = 0 \cdot a$ OR $a = 1 \cdot a$

14. As likely as not, because it's a 50% probability

15. $2\sqrt{5}$ is irrational & real.

16. $(-12)+(-7) = -19$

17. Rect: $(2.5 \cdot 2) = 5$

Circle: $3.14 \cdot 2^2 = 12.56$

Combined = $5+12.56 = 17.56$ ft

18. $\frac{7040 \text{ yds}}{1 \text{ hr}} \cdot (\quad) = ? \frac{\text{miles}}{1 \text{ hr}}$

$\frac{7040 \text{ yds}}{1 \text{ hr}} \cdot \frac{1 \text{ mi}}{1760 \text{ yds}} = \frac{7040}{1760} = 4 \text{ mph}$

19. 6

20. $\sqrt{16} = 4$

$\sqrt{17}$ ↗ closer to 4

$\sqrt{25} = 5$

4