$\qquad$ Class $\qquad$ Date $\qquad$
Unit 1 Test Review

## Learning Target

1.1 I can identify the properties of real numbers.

Name the property of real numbers illustrated by each equation.

1. $(2+x)+3=2+(x+3)$
2. $8+0=8$
3. $16(3 t+4 v)=48 t+64 v$
4. $\sqrt{2} \cdot 3=3 \cdot \sqrt{2}$

Lists the sets of numbers to which each number belongs.
5. -17
6. $\sqrt{52}$
7. 5
8. -3.25
9. 0

## Learning Target

1.2 I can use properties of real numbers and the correct order of operations to simplify expressions and functions.

Simplify each expression.
10. $\frac{3(a-b)}{9}+\frac{4}{9} b$
11. $t+\frac{t^{2}}{2}+t^{2}+t$
12. $2\left(m-n^{2}\right)-6\left(n^{2}+3 m\right)$
13. $x(x-y)+y(y-x)$

## Learning Target

1.3 I can solve single-step and multi-step equations in one variable.

Solve each equation.
14. $7 y+5=6 y+11$
15. $\frac{1}{4} x+3=\frac{1}{3} x-4$
16. $t-3\left(t+\frac{4}{3}\right)=2 t+3$
17. $0.5(c+2.8)-c=0.6 c+0.3$

Solve the equation for the indicated variable. State any restrictions on the variable.
18. $\frac{1}{3}(x+5)=k$, for $x$
19. $A=\frac{1}{2}\left(b_{1}+b_{2}\right) h$, for $b_{2}$
20. $A=\frac{1}{2}\left(b_{1}+b_{2}\right) h$, for $h$
21. $P=2(l+w)$, for $w$
22. $\frac{4}{3} x-\frac{5}{6} y=2$, for $y$

## Learning Target

1.4 I can create equations in one variable from verbal expressions and use them to solve the problem.

## Write an equation and solve the problem.

23. The cost of renting a car is 19.95 per day and 20 cents per mile. Find the cost of renting a car for a day when the car is driven 50 miles.
24. Two buses leave Dallas at the same time and travel in opposite directions. One bus averages $58 \mathrm{mi} / \mathrm{h}$, and the other bus averages $52 \mathrm{mi} / \mathrm{h}$. When will they be 363 mi apart?
25. The length of a rectangle is 5 cm greater than its width. The perimeter is 106 cm . Find the dimensions of the rectangle.
26. The sides of a triangle are in the ratio of $2: 8: 4$. If the perimeter is 27 in , what is the length of each side of the triangle?
27. Find two consecutive odd integers whose sum is 96 .
28. The measure of the complement of an angle is $9^{\circ}$ more than twice the angle. Find the measures of the angles.
29. A car salesman makes $\$ 350$ per week, plus $8 \%$ commission from every car he sells. If he sells 3 cars at $\$ 22,000$ each, how much did he earn? The next week, he earns $\$ 1500$. How much (in dollars) did he sell?

## Learning Target

1.5 I can solve single-step and multi-step inequalities in one variable.

## Solve each inequality. Graph the solutions.

30. $2 c+5 \leq-1$
31. $4-3 x>10$

Learning Target
1.6 I can solve compound inequalities containing "and" or "or".

Solve each compound inequality. Graph the solutions.
32. $2 x-3<-5$ or $3 x-10>x$
33. $-3<2 x-3<5$

## Learning Target

1.7 I can solve linear inequalities containing absolute value.

## Solve each equation. Check for extraneous solutions.

34. $|2 x-9|=1$
35. $|2 y+5|=3 y$

Solve each inequality. Graph the solutions.
36. $|4 z-3| \geq 5$
37. $6|5 x-2|-1<17$
38. The temperature $T$ of a refrigerator is at least $35^{\circ} \mathrm{F}$ and at most $41^{\circ} \mathrm{F}$. Write an absolute value inequality and a compound inequality for the temperature of the refrigerator.

