

1) Give an example of an expression, equation, and inequality. How can you identify one from the other?

EXPRESSION: $3x + 2$ EQUATION: $7x^2 = 4$ INEQUALITY: $x \geq 6$

EXPRESSIONS ARE MATHEMATICAL PHRASES, THEY DO NOT HAVE AN "=" OR "<=>" SIGN.
 EQUATIONS HAVE AN "=" SIGN / INEQUALITIES HAVE AN INEQUALITY (<, >, ≤, ≥)
 Circle the values that provide a solution or solutions to the given equation or inequality.

2) $m - 16 = 6$ {19, 20, 22, 23}

19 | $19 - 16 = 3$ NO
 20 | $20 - 16 = 4$ NO
 22 | $22 - 16 = 6$ YES
 23 | $23 - 16 = 7$ NO
 {22}

4) $\frac{x}{6} = 14 - 2 = 12$ {36, 48, 72, 84}

36 | $\frac{36}{6} = 6$ NO | 72 | $\frac{72}{6} = 12$ YES
 48 | $\frac{48}{6} = 8$ NO | 84 | $\frac{84}{6} = 14$ NO
 {72}

3) $8x > 30$ {3, 4, 5, 6}

3 | $8(3) = 24$ NO
 4 | $8(4) = 32$ YES
 5 | $8(5) = 40$ YES
 6 | $8(6) = 48$ YES
 {4, 5, 6}

5) $5w + 2w \geq 14$ {1, 2, 3, 4} {2, 3, 4}

1 | $5(1) + 2(1) \rightarrow 5 + 2 \rightarrow 7$ NO
 2 | $5(2) + 2(2) \rightarrow 10 + 4 \rightarrow 14$ YES
 3 | $5(3) + 2(3) \rightarrow 15 + 6 \rightarrow 21$ YES
 4 | $5(4) + 2(4) \rightarrow 20 + 8 \rightarrow 28$ YES

Solve for the variable. Show your work and don't forget to check your answer!

6) $8x = 78 + 2$

$8x = 78 + 2$
 $8x = 80$
 $\frac{8x}{8} = \frac{80}{8}$
 $x = 10$

7) $\frac{16}{4}t + 2 \cdot 6t - t + \frac{10}{2}t = 9^2 + 13(3)$

$4t + 12t - t + 5t = 81 + 39$
 $16t - t + 5t = 120$
 $15t + 5t = 120$
 $20t = 120$
 $\frac{20t}{20} = \frac{120}{20}$
 $t = 6$

8) $3(t + 3) + 9(2) - 27 = 42$

$3t + 9 + 18 - 27 = 42$
 $3t + 27 - 27 = 42$
 $3t = 42$
 $\frac{3t}{3} = \frac{42}{3}$
 $t = 14$

9) $9 \cdot 2x + 3 + 6(2x + 5) - 3(11) = 6(10)$

$16x + 3 + 12x + 39 - 33 = 60$
 $30x + 33 - 33 = 60$
 $30x = 60$
 $\frac{30x}{30} = \frac{60}{30}$
 $x = 2$

10) $4(x + 2) + x - 2^3 = 100 - 4(5)$

$4x + 8 + x - 8 = 100 - 20$
 $5x + 0 = 80$
 $\frac{5x}{5} = \frac{80}{5}$
 $x = 16$

11) $t - (6^2 + 0.48) = 0.35$

$t - (36 + 0.48) = 0.35$
 $t - 36.48 = 0.35$
 $+ 36.48$
 $t = 36.83$

12) $7 + x - 3 = 5(4)$

$4 + x = 20$
 -4
 $x = 16$

13) $x - 3^3 = 19$

$x - 27 = 19$
 $+ 27$
 $x = 46$

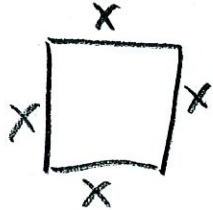
14) Gabriel had \$210 yesterday. Today he earned d dollars for mowing the neighbor's lawn. He now has \$245. Circle the equation or equations that accurately represent Gabriel's situation.

~~$210 - d = 245$~~
 $210 + d = 245$
 $245 = d + 210$
 ~~$245 = 210d$~~
 ~~$d = 210 - 245$~~
 $245 - d = 210$

$210 + d = 245$

15) The perimeter of a square is 64 inches. Write an equation (use x for the side length) and solve for the side length of the square.

Equation: $4x = 64$
 Solution: $x = 16$



$x + x + x + x = 64$
 $4x = 64$
 $\frac{4x}{4} = \frac{64}{4}$
 $x = 16$

16) Mr. Vander Heyden's tie costs 3 times as much as Mr. Bentley's tie. Together they spent \$128. Write an equation and solve to determine the price of each teacher's ties.

Equation: $3B + B = 128$ / $4B = 128$

$VH = 3B$

Cost of Mr. Vander Heyden's tie: $\$96$

Cost of Mr. Bentley's tie: $\$32$

$\frac{4B}{4} = \frac{128}{4}$ $VH = 3(32)$

Graph the following inequalities on a number line.

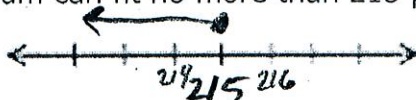
17) $10h + 4h > 3^3 + 15$
 $14h > 27 + 15$
 $14h > 42$
 $\frac{14h}{14} > \frac{42}{14}$
 $h > 3$

18) $m + 16 < 26$
 $-16 \quad -16$
 $m < 10$

19) $\frac{z}{23} \leq 16$
 $\frac{z}{8} \leq 16 \times 8$
 $z \leq 128$

20) $5h \geq 4(10)$
 $5h \geq 40$
 $h \geq 8$

21) The school auditorium can fit no more than 215 people. Inequality: $x \leq 215$



22) Sally must sell more than 5 coupon cards to attend the event. Inequality: $x > 5$

