Changing the Subject of a Formula

Exercise 1

Make $\boldsymbol{x}$ the subject of these formulas.

1) $x + 4 = y$ **2)** $x + a = 7$ **3)** $x + 3 = b$

4) $x + a = b$ **5)** $x - b = 8$ **6)** $x - a = 5$

7) $x - 4 = c$ **8)** $x - p = q$ **9)** $2x = f$

10) $3x = a$ **11)** $ax = 4$ **12)** $cx = d$

13) $px = -q$ **14)** $dx = -f$ **15)** $kx + h = 0$

16) $2x + 3 = c$ **17)** $3x + y = 4$ **18)** $ax + b = 9$

19) $2x + 4 = b$ **20)** $4x + r = h$ **21)** $3x - k = 5$

22) $3x - c = a$ **23)** $2x - c = d$ **24)** $ax - 3 = m$

25) $ax - b = 7$ **26)** $px - q = r$

Exercise 2

Make $\boldsymbol{x}$ the subject of these formulas.

1) $\frac{x}{2} = 3$ **2)** $\frac{x}{5} = a$ **3)** $\frac{x}{c} = 4$

4) $\frac{x}{a} = b$ **5)** $\frac{x}{2} = 5$ **6)** $\frac{x}{p} = q$

7) $\frac{2x}{3} = y$ **8)** $\frac{3x}{4} = h$ **9)** $\frac{ax}{5} = b$

10) $\frac{cx}{p} = q$ **11)** $\frac{x}{a} = bc$ **12)** $k = \frac{x}{r}$

Change the subject of each of the following formulas to the variable indicated.

13) $C = \pi d \ \ to\ d$ **14)** $S = \pi dn \ \ to\ n$ **15)** $PV = c \ \ to\ V$

16) $A = \pi rl \ \ to\ l$ **17)** $v^2 = 2gh \ \ to\ h$ **18)** $I = PRT \ \ to\ R$

19) $x = \frac{a}{y} \ \ to\ a$ **20)** $I = \frac{E}{R} \ \ to\ E$ **21)** $\boldsymbol{x = \frac{u}{a}} \ \ to\ u$

22) $P = \frac{RT}{V} \ \ to\ T$ **23)** $v = u + at \ \ to\ t$ **24)** $n = p + cr \ \ to\ r$

25) $y = ax + b \ \ to\ x$ **26)** $H = S + qL \ \ to\ q$

27) The perimeter of a square is $P = 4x$. Change the subject to $\boldsymbol{x}$.

28) The area of a rectangle is $A = lb$. Change the subject to $\boldsymbol{l}$.

29) The volume of a cuboid is $V = lbh$. Change the subject to $\boldsymbol{h}$.

30) The speed of a train is $S = \frac{D}{T}$. Change the subject to $\boldsymbol{D}$.

31) The current in a circuit is $I = \frac{V}{R}$. Change the subject to $\boldsymbol{V}$.

32) The equation of a straight line is $y = mx + c$. Change the subject to $\boldsymbol{m}$.