



KS3 Numeracy Challenge

#1

Can you solve all 26 letters
for these challenges?

Practice your numeracy every day to improve
your Maths skills.

www.addvancemaths.com/ks3nc/



A

$A = 12$

F

$F = 11E$

B

$B = 3A$

G

$G = 40 - F$

K

$K = \frac{4}{5} \text{ of } J$

O

$O = H - N$

S

$S = \frac{R}{10}$

W

$W = H + 4V$

C

$C = \frac{B}{2}$

H

$H = 8G$

L

$L = \frac{K}{5}$

P

$P = LO$

T

$T = ERS$

X

$X = 100W$

D

$D = C - A$

I

$I = 10H$

M

$M = \frac{L}{5}$

Q

$Q = 700 - P$

U

$U = 750 - 678$

Y

$Y = X + J$

E

$E = \frac{1}{2} \text{ of } D$

J

$J = I - 5A$

N

$N = 3M$

R

$R = \frac{5Q}{6}$

V

$V = \frac{U}{72}$

Z

$Z = 3Y$

A

$A = 12$

F

$F = 11E$

$F = 33$

B

$B = 3A$

$B = 36$

G

$G = 40 - F$

$G = 7$

K

$K = \frac{4}{5} \text{ of } J$

$K = 400$

O

$O = H - N$

$O = 8$

S

$S = \frac{R}{10}$

$S = 5$

W

$W = H + 4V$

$W = 60$

C

$C = \frac{B}{2}$

$C = 18$

H

$H = 8G$

$H = 56$

L

$L = \frac{K}{5}$

$L = 80$

P

$P = LO$

$P = 640$

T

$T = ERS$

$T = 750$

X

$X = 100W$

$X = 6000$

D

$D = C - A$

$D = 6$

I

$I = 10H$

$I = 560$

M

$M = \frac{L}{5}$

$M = 16$

Q

$Q = 700 - P$

$Q = 60$

U

$U = 750 - 678$

$U = 72$

Y

$Y = X + J$

$Y = 6500$

E

$E = \frac{1}{2} \text{ of } D$

$E = 3$

J

$J = I - 5A$

$J = 500$

N

$N = 3M$

$N = 48$

R

$R = \frac{5Q}{6}$

$R = 50$

V

$V = \frac{U}{72}$

$V = 1$

Z

$Z = 3Y$

$Z = 19,500$

Level: MildSkills: Substitution, Arithmetic,
Fractions of an Amount

A $A = 20$

F $F = D^3$

B $B = 3A$

G $G = D^4$

C $C = \frac{B}{2}$

H $H = 10G$

D $D = \frac{C}{10}$

I $I = H + B + C$

E $E = D^2$

J $J = \frac{I}{E}$

K $K = J - G$

L $L = 35 + K$

M $M = DL$

N $N = M + 2E$

O $O = 20\% \text{ of } N$

P $P = O - K$

Q $Q = P + 43$

R $R = \frac{Q}{10}$

S $S = R^2$

T $T = 2S$

U $U = 2T$

V $V = 2U$

W $W = \frac{V}{U}$

X $X = DRW$

Y $Y = -4X$

Z $Z = -10Y$

A $A = 20$

F $F = D^3$
 $F = 27$

B $B = 3A$
 $B = 60$

G $G = D^4$
 $G = 81$

C $C = \frac{B}{2}$
 $C = 30$

H $H = 10G$
 $H = 810$

D $D = \frac{C}{10}$
 $D = 3$

I $I = H + B + C$
 $I = 900$

E $E = D^2$
 $E = 9$

J $J = \frac{I}{E}$
 $J = 100$

K $K = J - G$
 $K = 19$

L $L = 35 + K$
 $L = 54$

M $M = DL$
 $M = 162$

N $N = M + 2E$
 $N = 180$

O $O = 20\% \text{ of } N$
 $N = 36$

P $P = O - K$
 $P = 17$

Q $Q = P + 43$
 $Q = 60$

R $R = \frac{Q}{10}$
 $R = 6$

S $S = R^2$
 $S = 36$

T $T = 2S$
 $T = 72$

U $U = 2T$
 $U = 144$

V $V = 2U$
 $V = 288$

W $W = \frac{V}{U}$
 $W = 2$

X $X = DRW$
 $X = 36$

Y $Y = -4X$
 $Y = -144$

Z $Z = -10Y$
 $Z = 1440$

A

$$A = 8$$

F

$$F = \frac{A}{E}$$

B

$$B = 2A - 6$$

G

$$G = 15\% \text{ of } C$$

K

$$K = \frac{-10}{H}$$

O

$$O = \frac{N}{F}$$

S

$$S = 4R$$

W

$$W = \sqrt{V + 1}$$

C

$$C = AB$$

H

$$H = \frac{B^2}{D}$$

L

$$L = \frac{1}{2} \text{ of } K$$

P

$$P = -100N$$

T

$$T = \sqrt{S + 3}$$

X

$$X = 3A - W$$

D

$$D = 100 - C$$

I

$$I = \sqrt{2D - E}$$

M

$$M = L + 0.5$$

Q

$$Q = 100 - P$$

U

$$U = 5 - T$$

Y

$$Y = 75\% \text{ of } X$$

E

$$E = D - 2A$$

J

$$J = \frac{1 - A}{7}$$

N

$$N = 3L$$

R

$$R = Q + O$$

V

$$V = 30 - U$$

Z

$$Z = Y^{-J}$$

A $A = 8$

F $F = \frac{A}{E}$
 $F = 2$

B $B = 2A - 6$
 $B = 10$

G $G = 15\% \text{ of } C$
 $G = 12$

K $K = \frac{-10}{H}$
 $K = -2$

O $O = \frac{N}{F}$
 $N = -0.75$

S $S = 4R$
 $S = 97$

W $W = \sqrt{V + 1}$
 $W = 6$

C $C = AB$
 $C = 80$

H $H = \frac{B^2}{D}$
 $H = 5$

L $L = \frac{1}{2} \text{ of } K$
 $L = -1$

P $P = -100N$
 $P = 75$

T $T = \sqrt{S + 3}$
 $T = 10$

X $X = 3A - W$
 $X = 18$

D $D = 100 - C$
 $D = 20$

I $I = \sqrt{2D - E}$
 $I = 6$

M $M = L + 0.5$
 $M = -0.5$

Q $Q = 100 - P$
 $Q = 25$

U $U = 5 - T$
 $U = -5$

Y $Y = 75\% \text{ of } X$
 $Y = 13.5$

E $E = D - 2A$
 $E = 4$

J $J = \frac{1 - A}{7}$
 $J = -1$

N $N = 3L$
 $N = -1.5$

R $R = Q + O$
 $R = 24.25$

V $V = 30 - U$
 $V = 35$

Z $Z = Y^{-J}$
 $Z = 13.5$

Level: Tricky

Skills: Substitution, BIDMAS, Indices, Roots, Decimals, General Arithmetic Negative Numbers and Percentages



KS3 Numeracy Challenge

#2

Can you solve all 26 letters
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A $A = 30$

F $F = E^2$

B $B = 2A$

G $G = E^3$

K $K = \frac{3}{8} \text{ of } J$

O $O = N - 2A$

S $S = R - AC$

W $W = \frac{V}{1000}$

C $C = \frac{B}{6}$

H $H = \frac{G}{2}$

L $L = EK$

P $P = O + O + O$

T $T = 5(S - 190)$

X $X = W - \frac{A}{6}$

D $D = C + 7$

I $I = \frac{H}{9}$

M $M = L - A - J$

Q $Q = \frac{P}{I}$

U $U = 90 - T$

Y $Y = 300X$

E $E = \frac{D + 1}{3}$

J $J = B - 3 \times I$

N $N = 100 - 23M$

R $R = 50Q$

V $V = 18R$

Z $Z = 50Y$

Level: Mild

Skills: Substitution, Arithmetic,
Fractions of an Amount

A $A = 30$

F $F = E^2$
 $F = 36$

B $B = 2A$
 $B = 60$

G $G = E^3$
 $G = 216$

K $K = \frac{3}{8} \text{ of } J$
 $K = 9$

O $O = N - 2A$
 $N = 40$

S $S = R - AC$
 $S = 200$

W $W = \frac{V}{1000}$
 $W = 9$

C $C = \frac{B}{6}$
 $C = 10$

H $H = \frac{G}{2}$
 $H = 108$

L $L = EK$
 $L = 54$

P $P = O + O + O$
 $P = 120$

T $T = 5(S - 190)$
 $T = 50$

X $X = W - \frac{A}{6}$
 $X = 4$

D $D = C + 7$
 $D = 17$

I $I = \frac{H}{9}$
 $I = 12$

M $M = L - A - J$
 $M = 0$

Q $Q = \frac{P}{I}$
 $Q = 10$

U $U = 90 - T$
 $U = 40$

Y $Y = 300X$
 $Y = 1200$

E $E = \frac{D + 1}{3}$
 $E = 6$

J $J = B - 3 \times I$
 $J = 24$

N $N = 100 - 23M$
 $N = 100$

R $R = 50Q$
 $R = 500$

V $V = 18R$
 $V = 9000$

Z $Z = 50Y$
 $Z = 60,000$

Level: Mild

Answers!

A

$A = 25$

F

$F = DE$

**KS3**

Numeracy Challenge #2

B

$B = \sqrt{A}$

G

$G = \frac{F}{BE}$

K

$K = \frac{J - 22}{5}$

O

$O = 2N - H$

S

$S = \sqrt{R}$

W

$W = U + V$

C

$C = B^3$

H

$H = G^2$

L

$L = \sqrt{K - 4}$

P

$P = O - D$

T

$T = S^3$

X

$X = 100W$

D

$D = \frac{A + C}{3}$

I

$I = F + G + H$

M

$M = 1.5L$

Q

$Q = P^2$

U

$U = \frac{T}{10}$

Y

$Y = \frac{X}{2} + \frac{X}{2} + \frac{X}{2} + \frac{X}{2}$

E

$E = D - 6B$

J

$J = \frac{I}{B}$

N

$N = M^2$

R

$R = \frac{Q}{9}$

V

$V = \frac{T}{100}$

Z

$Z = \frac{Y}{F}$

Z = ???

A $A = 25$

F $F = DE$
 $F = 1000$

B $B = \sqrt{A}$
 $B = 5$

G $G = \frac{F}{BE}$
 $G = 10$

C $C = B^3$
 $C = 125$

H $H = G^2$
 $H = 100$

D $D = \frac{A + C}{3}$
 $D = 50$

I $I = F + G + H$
 $I = 1110$

E $E = D - 6B$
 $E = 20$

J $J = \frac{I}{B}$ $J = 222$

K $K = \frac{J - 22}{5}$
 $K = 40$

L $L = \sqrt{K - 4}$
 $L = 6$

M $M = 1.5L$
 $M = 9$

N $N = M^2$
 $N = 81$

O $O = 2N - H$
 $O = 62$

P $P = O - D$
 $P = 12$

Q $Q = P^2$
 $Q = 144$

R $R = \frac{Q}{9}$
 $R = 16$

S $S = \sqrt{R}$
 $S = 4$

T $T = S^3$
 $T = 64$

U $U = \frac{T}{10}$
 $U = 6.4$

V $V = \frac{T}{100}$
 $U = 0.64$

W $W = U + V$
 $W = 7.04$

X $X = 100W$
 $X = 704$

Y $Y = \frac{X}{2} + \frac{X}{2} + \frac{X}{2} + \frac{X}{2}$
 $Y = 1408$

Z $Z = \frac{Y}{F}$
 $Z = 1.408$

$Z = ???$

A $A = 15$

F $F = D^3$

B $B = \sqrt{A+1}$

G $G = \frac{F}{4}$

K $K = 7J$

O $O = \frac{500}{L+N}$

S $S = 35\% \text{ of } R$

W $W = DMNV$

C $C = AB$

H $H = \frac{G+2}{10}$

L $L = K + 12.6$

P $P = O^4$

T $T = \frac{S}{2}$

X $X = \frac{3}{10} \text{ of } W$

D $D = \sqrt{C+B}$

I $I = 4H$

M $M = \sqrt{L}$

Q $Q = \frac{P}{50}$

U $U = (T-10)^1$

Y $Y = \sqrt{X+148}$

E $E = D^2$

J $J = 10\% \text{ of } I$

N $N = M^{M-7}$

R $R = 35\% \text{ of } Q$

V $V = \sqrt{100U}$

Z $Z = 1\frac{3}{4} \text{ of } Y$

Level: Tricky

Skills: Substitution, BIDMAS, Indices, Roots,
Decimals, General Arithmetic Negative
Numbers and Percentages

A $A = 15$

F $F = D^3$
 $F = 512$

B $B = \sqrt{A+1}$
 $B = 4$

G $G = \frac{F}{4}$
 $G = 128$

K $K = 7J$
 $K = 36.4$

O $O = \frac{500}{L+N}$
 $O = 10$

S $S = 35\% \text{ of } R$
 $S = 24.5$

W $W = DMNV$
 $W = 840$

C $C = AB$
 $C = 60$

H $H = \frac{G+2}{10}$
 $H = 13$

L $L = K + 12.6$
 $L = 49$

P $P = O^4$
 $P = 10000$

T $T = \frac{S}{2}$
 $T = 12.25$

X $X = \frac{3}{10} \text{ of } W$
 $X = 252$

D $D = \sqrt{C+B}$
 $D = 8$

I $I = 4H$
 $I = 52$

M $M = \sqrt{L}$
 $M = 7$

Q $Q = \frac{P}{50}$
 $Q = 200$

U $U = (T-10)^1$
 $U = 2.25$

Y $Y = \sqrt{X+148}$
 $Y = 20$

E $E = D^2$
 $E = 64$

J $J = 10\% \text{ of } I$
 $J = 5.2$

N $N = M^{M-7}$
 $N = 1$

R $R = 35\% \text{ of } Q$
 $R = 70$

V $V = \sqrt{100U}$
 $V = 15$

Z $Z = 1\frac{3}{4} \text{ of } Y$
 $Z = 35$

Level: Tricky

Answers!



KS3 Numeracy Challenge

#3

Can you solve all 26 letters
for these challenges?

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A $A = 360$

F $F = E^2$

B $B = \frac{A}{2}$

G $G = E^3$

K $K = J + 6$

O $O = \frac{N}{2}$

S $S = 2R$

W $W = \frac{V}{5}$

C $C = 200 - B$

H $H = E^4$

L $L = \frac{K}{7}$

P $P = O - G$

T $T = 10S$

X $X = \frac{W}{6}$

D $D = A - 3C$

I $I = E^5$

M $M = 14L$

Q $Q = 8P$

U $U = 10T$

Y $Y = \frac{3}{4} \text{ of } X$

E $E = \frac{D}{150}$

J $J = E^6$

N $N = M - J$

R $R = \frac{Q - 8}{8}$

V $V = U + 10C$

Z $Z = \frac{3}{10} \text{ of } Y$

Level: Mild

Skills: Substitution, Arithmetic,
Fractions of an Amount

A $A = 360$

F $F = E^2$

$F = 4$

B $B = \frac{A}{2}$
 $B = 180$

G $G = E^3$
 $G = 8$

K $K = J + 6$
 $K = 70$

O $O = \frac{N}{2}$
 $O = 38$

S $S = 2R$
 $S = 58$

W $W = \frac{V}{5}$
 $W = 1200$

C $C = 200 - B$
 $C = 20$

H $H = E^4$
 $H = 16$

L $L = \frac{K}{7}$
 $L = 10$

P $P = O - G$
 $P = 30$

T $T = 10S$
 $T = 580$

X $X = \frac{W}{6}$
 $X = 200$

D $D = A - 3C$
 $D = 300$

I $I = E^5$
 $I = 32$

M $M = 14L$
 $M = 140$

Q $Q = 8P$
 $Q = 240$

U $U = 10T$
 $U = 5800$

Y $Y = \frac{3}{4} \text{ of } X$
 $Y = 150$

E $E = \frac{D}{150}$ $E = 2$

J $J = E^6$
 $J = 64$

N $N = M - J$
 $N = 76$

R $R = \frac{Q - 8}{8}$
 $R = 29$

V $V = U + 10C$
 $V = 6000$

Z $Z = \frac{3}{10} \text{ of } Y$
 $Z = 45$

Level: Mild

Answers!

A

$A = 2$

F

$F = \frac{3}{4} \text{ of } E$

B

$B = A^2$

G

$G = F + 3A$

K

$K = J^2$

O

$O = H - N + J$

S

$S = 6R$

W

$W = \frac{V}{100}$

C

$C = A^3$

H

$H = 4G$

L

$L = J^3$

P

$P = O^2$

T

$T = S - 2G$

X

$X = \sqrt{W}$

D

$D = A^4$

I

$I = \frac{1}{10} \text{ of } H$

M

$M = J^4$

Q

$Q = \frac{P + 4}{8}$

U

$U = \frac{T + 50}{5}$

Y

$Y = 4X$

E

$E = A^5$

J

$J = \frac{1}{4} \text{ of } I$

N

$N = K + L + M$

R

$R = A^2 J Q$

V

$V = U^2$

Z

$Z = \frac{4}{7} \text{ of } Y$

A $A = 2$

F $F = \frac{3}{4} \text{ of } E$
 $F = 24$

B $B = A^2$
 $B = 4$

G $G = F + 3A$
 $G = 30$

C $C = A^3$
 $C = 8$

H $H = 4G$
 $H = 120$

D $D = A^4$
 $D = 16$

I $I = \frac{1}{10} \text{ of } H$
 $I = 12$

E $E = A^5$
 $E = 32$

J $J = \frac{1}{4} \text{ of } I$
 $J = 3$

K $K = J^2$
 $K = 9$

L $L = J^3$
 $L = 27$

M $M = J^4$
 $M = 81$

N $N = K + L + M$
 $N = 117$

O $O = H - N + J$
 $O = 6$

P $P = O^2$
 $P = 36$

Q $Q = \frac{P + 4}{8}$
 $Q = 5$

R $R = A^2 J Q$
 $R = 60$

S $S = 6R$
 $S = 360$

T $T = S - 2G$
 $T = 300$

U $U = \frac{T + 50}{5}$
 $U = 70$

V $V = U^2$
 $V = 4900$

W $W = \frac{V}{100}$
 $W = 49$

X $X = \sqrt{W}$
 $X = 7$

Y $Y = 4X$
 $Y = 28$

Z $Z = \frac{4}{7} \text{ of } Y$
 $Z = 16$

A

$A = 1.5$

F

$F = 4E$

B

$B = 5A$

G

$G = F - 4C$

K

$K = J + 2A$

O

$O = L^4$

S

$S = R^2$

W

$W = V - 40$

C

$C = 2B$

H

$H = \frac{3}{10} \text{ of } G$

L

$L = \frac{K + 1}{5}$

P

$P = O - 296$

T

$T = \frac{S}{100}$

X

$X = 10 + W$

D

$D = C^2$

I

$I = 0.1H$

M

$M = L^2$

Q

$Q = P - 79$

U

$U = \sqrt{T}$

Y

$Y = -4X$

E

$E = \frac{D + 25}{5}$

J

$J = 5I$

N

$N = L^3$

R

$R = 20\% \text{ of } Q$

V

$V = \frac{7}{5} \text{ of } U$

Z

$Z = Y - X + W$

Level: Tricky

 Skills: Substitution, BIDMAS, Indices, Roots,
Decimals, General Arithmetic Negative
Numbers and Percentages

A $A = 1.5$

F $F = 4E$
 $F = 200$

B $B = 5A$
 $B = 7.5$

G $G = F - 4C$
 $G = 140$

K $K = J + 2A$
 $K = 24$

O $O = L^4$
 $O = 625$

S $S = R^2$
 $S = 2500$

W $W = V - 40$
 $W = -33$

C $C = 2B$
 $C = 15$

H $H = \frac{3}{10} \text{ of } G$
 $H = 42$

L $L = \frac{K + 1}{5}$
 $L = 5$

P $P = O - 296$
 $O = 329$

T $T = \frac{S}{100}$
 $T = 25$

X $X = 10 + W$
 $X = -23$

D $D = C^2$
 $D = 225$

I $I = 0.1H$
 $I = 4.2$

M $M = L^2$
 $M = 25$

Q $Q = P - 79$
 $Q = 250$

U $U = \sqrt{T}$
 $U = 5$

Y $Y = -4X$
 $Y = 92$

E $E = \frac{D + 25}{5}$
 $E = 50$

J $J = 5I$
 $J = 21$

N $N = L^3$
 $N = 125$

R $R = 20\% \text{ of } Q$
 $R = 50$

V $V = \frac{7}{5} \text{ of } U$
 $V = 7$

Z $Z = Y - X + W$
 $Z = 82$

Level: Tricky

Answers!



KS3 Numeracy Challenge

#4

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A $A = 250$

F $F = 3E^2$

B $B = \frac{A}{5}$

G $G = F^2$

K $K = J - 236$

O $O = 4N$

S $S = \frac{P}{R}$

W $W = 12V$

C $C = 3B$

H $H = F^3$

L $L = BK$

P $P = 2M - 2O$

T $T = 10S$

X $X = \sqrt{W}$

D $D = \frac{1}{10} \text{ of } C$

I $I = F^4$

M $M = L - A$

Q $Q = 3P$

U $U = 100 - 2T$

Y $Y = \frac{3}{4} \text{ of } X$

E $E = \frac{D}{15}$

J $J = 3I$

N $N = M - 77$

R $R = \frac{Q - 8}{5}$

V $V = \frac{U}{5}$

Z $Z = \frac{2}{3} \text{ of } Y$

Level: Mild

Skills: Substitution, Arithmetic,
Fractions of an Amount

A $A = 250$

F $F = 3E^2$

$F = 3$

B $B = \frac{A}{5}$

$B = 50$

G $G = F^2$

$G = 9$

K $K = J - 236$

$K = 7$

O $O = 4N$

$O = 92$

S $S = \frac{P}{R}$

$S = 2$

W $W = 12V$

$W = 144$

C $C = 3B$

$C = 150$

H $H = F^3$

$H = 27$

L $L = BK$

$L = 350$

P $P = 2M - 2O$

$P = 16$

T $T = 10S$

$T = 20$

X $X = \sqrt{W}$

$X = 12$

D $D = \frac{1}{10} \text{ of } C$

$D = 15$

I $I = F^4$

$I = 81$

M $M = L - A$

$M = 100$

Q $Q = 3P$

$Q = 48$

U $U = 100 - 2T$

$U = 60$

Y $Y = \frac{3}{4} \text{ of } X$

$Y = 9$

E $E = \frac{D}{15}$

$E = 1$

J $J = 3I$

$J = 243$

N $N = M - 77$

$N = 23$

R $R = \frac{Q - 8}{5}$

$R = 8$

V $V = \frac{U}{5}$

$V = 12$

Z $Z = \frac{2}{3} \text{ of } Y$

$Z = 6$

$Z = ???$

Level: Mild

Answers!

A

$A = 5$

F

$F = \frac{1}{4} \text{ of } E$

B

$B = A^2$

G

$G = F + 3A$

K

$K = J^2$

O

$O = \frac{N}{5}$

S

$S = R(R + 1)$

W

$W = \frac{2}{3} \text{ of } V$

C

$C = A^3$

H

$H = \frac{G}{5}$

L

$L = J^3$

P

$P = \frac{O - 222}{8}$

T

$T = S^2$

X

$X = 15W$

D

$D = C - B$

I

$I = H^2$

M

$M = J^4$

Q

$Q = \frac{P}{10}$

U

$U = 15\% \text{ of } T$

Y

$Y = \frac{X}{S}$

E

$E = 2D$

J

$J = \frac{I + 1}{17}$

N

$N = K + L + M + J$

R

$R = \sqrt{Q}$

V

$V = 0.2U$

Z

$Z = \frac{7}{3} \text{ of } Y$

A $A = 5$

F $F = \frac{1}{4} \text{ of } E$
 $F = 50$

B $B = A^2$
 $B = 25$

G $G = F + 3A$
 $G = 65$

K $K = J^2$
 $K = 100$

O $O = \frac{N}{5}$
 $O = 2222$

S $S = R(R + 1)$
 $S = 30$

W $W = \frac{2}{3} \text{ of } V$
 $W = 18$

C $C = A^3$
 $C = 125$

H $H = \frac{G}{5}$
 $H = 13$

L $L = J^3$
 $L = 1000$

P $P = \frac{O - 222}{8}$
 $P = 250$

T $T = S^2$
 $T = 900$

X $X = 15W$
 $X = 270$

D $D = C - B$
 $D = 100$

I $I = H^2$
 $I = 169$

M $M = J^4$
 $M = 10000$

Q $Q = \frac{P}{10}$
 $Q = 25$

U $U = 15\% \text{ of } T$
 $U = 135$

Y $Y = \frac{X}{S}$
 $Y = 9$

E $E = 2D$
 $E = 200$

J $J = \frac{I + 1}{17}$
 $J = 10$

N $N = K + L + M + J$
 $N = 11110$

R $R = \sqrt{Q}$
 $R = 5$

V $V = 0.2U$
 $V = 27$

Z $Z = \frac{7}{3} \text{ of } Y$
 $Z = 21$

A

$A = 1.2$

F

$F = \sqrt{E - 4}$



KS3

Numeracy Challenge #4

B

$B = A^2$

G

$G = 125\% \text{ of } F$

K

$K = \sqrt{J + 16}$

O

$O = N - 0.29$

S

$S = 10R$

W

$W = 5V + 15$

C

$C = B + 1.38$

H

$H = AG$

L

$L = \frac{J}{KH}$

P

$P = O^2$

T

$T = 100R$

X

$X = 35\% \text{ of } W$

D

$D = 200C$

I

$I = -3H$

M

$M = 1.3L$

Q

$Q = Q - 0.46$

U

$U = \sqrt{T}$

Y

$Y = X - W$

E

$E = \frac{D - 64}{20}$

J

$J = GH - I$

N

$N = L^2$

R

$R = 1.5^2$

V

$V = \frac{7}{5} \text{ of } U$

Z

$Z = Y^2$

Z = ???

A $A = 1.2$

F $F = \sqrt{E - 4}$
 $F = 4$

B $B = A^2$
 $B = 1.44$

G $G = 125\% \text{ of } F$
 $G = 5$

K $K = \sqrt{J + 16}$
 $K = 8$

O $O = N - 0.29$
 $O = 1.4$

S $S = 10R$
 $S = 22.5$

W $W = 5V + 15$
 $W = 120$

C $C = B + 1.38$
 $C = 2.82$

H $H = AG$
 $H = 6$

L $L = \frac{J}{KH}$
 $L = 1$

P $P = O^2$
 $O = 1.96$

T $T = 100R$
 $T = 225$

X $X = 35\% \text{ of } W$
 $X = 42$

D $D = 200C$
 $D = 564$

I $I = -3H$
 $I = -18$

M $M = 1.3L$
 $M = 1.3$

Q $Q = Q - 0.46$
 $Q = 1.5$

U $U = \sqrt{T}$
 $U = 15$

Y $Y = X - W$
 $Y = -78$

E $E = \frac{D - 64}{20}$
 $E = 25$

J $J = GH - I$
 $J = 48$

N $N = L^2$
 $N = 1.69$

R $R = 1.5^2$
 $R = 2.25$

V $V = \frac{7}{5} \text{ of } U$
 $V = 21$

Z $Z = Y^2$
 $Z = 6084$

Level: Tricky

Answers!



KS3 Numeracy Challenge

#5

Can you solve all 26 letters
for these challenges?

Practice your numeracy every day to improve
your Maths skills.

www.addvancemaths.com/ks3nc/



A

$A = 15$

F

$F = E - 3A$

B

$B = \frac{A}{3}$

G

$G = \frac{F}{10}$

K

$K = J + 3A$

O

$O = N - 40$

S

$S = \frac{R}{2}$

W

$W = 13V$

C

$C = 2B$

H

$H = G^2$

L

$L = \frac{K}{5}$

P

$P = BGO$

T

$T = \frac{S + 8}{10}$

X

$X = W^2$

D

$D = AC$

I

$I = G^3$

M

$M = \sqrt{L}$

Q

$Q = \frac{4}{10} \text{ of } P$

U

$U = 9T - S$

Y

$Y = \frac{X + 1}{2}$

E

$E = \frac{D}{2}$

J

$J = 5I$

N

$N = 7M$

R

$R = Q^2$

V

$V = \frac{U + 5}{5}$

Z

$Z = \frac{Y}{5}$

Level: Mild

Skills: Substitution, Arithmetic, Fractions of an Amount

Z = ???

A $A = 15$

F $F = E - 3A$

$F = 30$

B $B = \frac{A}{3}$

$B = 5$

G $G = \frac{F}{10}$

$G = 3$

K $K = J + 3A$

$K = 180$

O $O = N - 40$

$O = 2$

S $S = \frac{R}{2}$

$S = 72$

W $W = 13V$

$W = 13$

C $C = 2B$

$C = 10$

H $H = G^2$

$H = 9$

L $L = \frac{K}{5}$

$L = 36$

P $P = BGO$

$P = 30$

T $T = \frac{S + 8}{10}$

$T = 8$

X $X = W^2$

$X = 169$

D $D = AC$

$D = 150$

I $I = G^3$

$I = 27$

M $M = \sqrt{L}$

$M = 6$

Q $Q = \frac{4}{10} \text{ of } P$

$Q = 12$

U $U = 9T - S$

$U = 0$

Y $Y = \frac{X + 1}{2}$

$Y = 85$

E $E = \frac{D}{2}$

$E = 75$

J $J = 5I$

$J = 135$

N $N = 7M$

$N = 42$

R $R = Q^2$

$R = 144$

V $V = \frac{U + 5}{5}$

$V = 1$

Z $Z = \frac{Y}{5}$

$Z = 17$

Level: Mild

Answers!

A

$A = 1.3$

F

$F = \frac{1}{4} \text{ of } E$

B

$B = 2A$

G

$G = E + F$

K

$K = \frac{J + 200}{3}$

O

$O = \frac{N + 9}{5}$

S

$S = \sqrt{R + 13}$

W

$W = 7V$

C

$C = 2B$

H

$H = \frac{G}{A}$

L

$L = \frac{K}{20^2}$

P

$P = 250$

T

$T = 75\% \text{ of } S$

X

$X = W + A$

D

$D = 2C$

I

$I = \sqrt{H}$

M

$M = 23L$

Q

$Q = 30\% \text{ of } 850$

U

$U = \frac{7}{3} \text{ of } T$

Y

$Y = \frac{X - 0.9}{8}$

E

$E = 10D$

J

$J = I^3$

N

$N = 7M$

R

$R = \frac{Q}{5}$

V

$V = 0.2U$

Z

$Z = Y^2$

A

$A = 1.3$

F

$F = \frac{1}{4} \text{ of } E$

$F = 26$

+AdvanceMa**KS3****Numeracy
Challenge #5****B**

$B = 2A$

$B = 2.6$

G

$G = E + F$

$G = 130$

K

$K = \frac{J + 200}{3}$

$K = 400$

O

$O = \frac{N + 9}{5}$

$O = 34$

S

$S = \sqrt{R + 13}$

$S = 8$

W

$W = 7V$

$W = 19.6$

C

$C = 2B$

$C = 5.2$

H

$H = \frac{G}{A}$

$H = 100$

L

$L = \frac{K}{20^2}$

$L = 1$

P

$P = 250$

$P = 850$

T

$T = 75\% \text{ of } S$

$T = 6$

X

$X = W + A$

$X = 20.9$

D

$D = 2C$

$D = 10.4$

I

$I = \sqrt{H}$

$I = 10$

M

$M = 23L$

$M = 23$

Q

$Q = 30\% \text{ of } 850$

$Q = 255$

U

$U = \frac{7}{3} \text{ of } T$

$U = 14$

Y

$Y = \frac{X - 0.9}{8}$

$Y = 2.5$

E

$E = 10D$

$E = 104$

J

$J = I^3$

$J = 1000$

N

$N = 7M$

$N = 161$

R

$R = \frac{Q}{5}$

$R = 51$

V

$V = 0.2U$

$V = 2.8$

Z

$Z = Y^2$

$Z = 6.25$

Level: BoosterSkills: Substitution, BIDMAS, Indices,
Decimals, General Arithmetic and
Fractions of an Amountwww.advancemaths.com/ks3nc/ $Z = ???$

A

$A = -4$

F

$F = E + 3A$

**KS3****Numeracy Challenge #5****B**

$B = A^2$

G

$G = F + A$

K

$K = \sqrt{J + 9}$

O

$O = \frac{145}{N}$

S

$S = \frac{Q + R}{2}$

W

$W = \frac{V}{14}$

C

$C = A^3$

H

$H = G^2$

L

$L = AJK$

P

$P = (O + 1)^2$

T

$T = \sqrt{S - 7}$

X

$X = 60\% \text{ of } W$

D

$D = A^4$

I

$I = 4H$

M

$M = J - L$

Q

$Q = 45\% \text{ of } O$

U

$U = T^2$

Y

$Y = X^2$

E

$E = \frac{D - 6}{20}$

J

$J = \sqrt{I}$

N

$N = \sqrt[3]{M + 6}$

R

$R = Q^0$

V

$V = 250\% \text{ of } U$

Z

$Z = \sqrt{Y}$

A $A = -4$

F $F = E + 3A$
 $F = 0.5$

B $B = A^2$
 $B = 16$

G $G = F + A$
 $G = -3.5$

K $K = \sqrt{J + 9}$
 $K = 4$

O $O = \frac{145}{N}$
 $O = 29$

S $S = \frac{Q + R}{2}$
 $S = 203$

W $W = \frac{V}{14}$
 $W = 35$

C $C = A^3$
 $C = -64$

H $H = G^2$
 $H = 12.25$

L $L = AJK$
 $L = -112$

P $P = (O + 1)^2$
 $O = 900$

T $T = \sqrt{S - 7}$
 $T = 14$

X $X = 60\% \text{ of } W$
 $X = 21$

D $D = A^4$
 $D = 256$

I $I = 4H$
 $I = 49$

M $M = J - L$
 $M = 119$

Q $Q = 45\% \text{ of } O$
 $Q = 405$

U $U = T^2$
 $U = 196$

Y $Y = X^2$
 $Y = 441$

E $E = \frac{D - 6}{20}$
 $E = 12.5$

J $J = \sqrt{I}$
 $J = 7$

N $N = \sqrt[3]{M + 6}$
 $N = 5$

R $R = Q^0$
 $R = 1$

V $V = 250\% \text{ of } U$
 $V = 490$

Z $Z = \sqrt{Y}$
 $Z = 21$

Level: Tricky

Answers!