Skills Appendix Answer Key

Analyse Graphs

1. A: none, B: exponential, C: quadratic, D: linear

Common Factoring

1. a) $3n(2 - 3n)$

b) $12y^2(2x + y)$

c) $4xyz(3xy^2 + 4)$

d) $5p^2q(3pq - 5)$

e) $2a^2b^3(3ab^2 + 8 - 12ab^3)$

f) $ab(3 + 21b - 7a)$

g) $5m^3(1 - mn^5)$

h) $2(x - 2)(x - 5)$

Compound Interest

1. a) $i = 1.6250\%$, $n = 20$, $A = \$1173.36$

b) $i = 0.9375\%$, $n = 8$, $A = \$2155.02$

c) $i = 0.4875\%$, $n = 36$, $A = \$1638.08$

d) $i = 0.0075\%$, $n = 730$, $A = \$2113.08$

2. a) \$893.36 **b)** \$23 352.38

c) \$418.42 **d)** \$964.83

Cosine Law

1. a) $\angle B = 86°$, $C = 62°$, $a = 13.5$ cm

b) $\angle D = 67°$, $E = 81°$, $\angle F = 32°$

c) $\angle Y = 41°$, $Z = 81°$, $d = 15.5$ cm

Evaluating Expressions

1. a) −48 **b)** −1 **c)** −24

d) −27 **e)** −16 **f)** 0

2. a) $\frac{1}{12}$ **b)** 3 **c)** $\frac{5}{12}$

d) $\frac{19}{144}$ **e)** $\frac{1}{24}$ **f)** $\frac{105}{36}$ or $\frac{11}{12}$

Evaluating Radicals

1. a) 12 **b)** −7 **c)** 3000 **d)** 10

2. a) 7.6 **b)** −12.5 **c)** 6

d) 5.7 **e)** 4.8 **f)** −25.2

Expanding Algebraic Expressions

1. a) $-6x + 21$ **b)** $4x - 6y + 2$

c) $6a^2 + 21a$ **d)** $-4m + 3n + 6p$

e) $p - 6q - 2$ **f)** $-x^2 + 5xy + 2xz$

Exponential Functions

1. a) not exponential (linear)

b) exponential

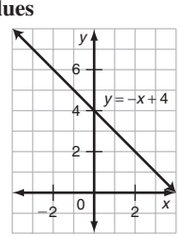
First and Second Differences

1. a) quadratic **b)** linear

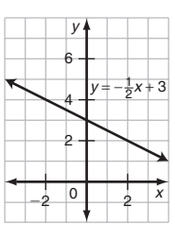
c) neither **d)** quadratic

Graphing Linear and Quadratic Equations Using a Table of Values

1. a)



b)



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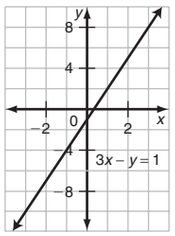

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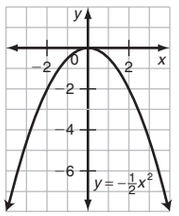

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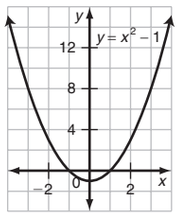

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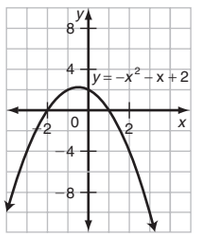

Greatest Common Factor

1. a) $5x$ **b)** $7abc$ **c)** $3n^2$

d) $5m^2n$ **e)** $4xz$ **f)** x

Lowest Common Multiple

1. a) 14 **b)** 18 **c)** 12

d) 18 **e)** 60 **f)** 16

Multiplying Binomials

1. a) $-3a^2 + 14a - 15$

b) $-6m^2 + 10m + 4$

c) $-2x^2 + 7xy + 4y^2$

d) $10m^2 - mn - 3n^2$

Percents

1. a) 65%, 0.65

b) 12.5%, 0.125

c) 237.5%, 2.375

d) 150%, 1.5

e) $\frac{6}{25}$, 0.24

f) $\frac{3}{500}$, 0.006

g) $\frac{9}{200}$, 0.045

h) $\frac{11}{20}$, 55%

i) $3\frac{21}{100}$, 3.21%

j) $\frac{1}{50}$, 2%

Pythagorean Theorem

1. a) 8.5 **b)** 9.9 **c)** 8.1

d) 10.2 **e)** 6.9

Rational Number Skills

1. a) $\frac{7}{10}$ **b)** $-\frac{19}{72}$ **c)** $-\frac{3}{8}$

d) $\frac{2}{9}$ **e)** −2 **f)** $\frac{1}{54}$

Rearranging and Evaluating Formulas

1. a) $v = \frac{D}{t}$

b) $b = y - mx$

c) $a = \pm\sqrt{c^2 - b^2}$

d) $t = \frac{k}{d}$

e) $q = \frac{pt}{s}$

f) $d = \frac{2s}{t}$

g) $r = \sqrt{\frac{3V}{\pi h}}$

h) $s = \frac{\text{S.A.}}{\pi r} - r$

2. a) $P = 38$ cm **b)** $P = 12.8$ cm **c)** $A = 2.25$ cm
d) $V = 904.8$ m^3 **e)** $S = 1005.3$ m^2

Simple Interest

1. a) \$243.75 **b)** \$41.63
c) \$273.60 **d)** \$27.18

Sine Law

1. a) $\angle A = 62°$, $b = 17.1$ cm, $c = 26.7$ cm
b) $\angle E = 22.7°$, $\angle F = 82.3°$, $f = 25.6$ cm
c) $\angle X = 60°$, $x = 13.8$ m, $z = 12.2$ m

Substituting Into Equations

1. a) $y = -7$ **b)** $y = 2$ **c)** $y = 15$
d) $y = -4$ **e)** $y = \pm 3$

Surface Area

1. a) 9350 cm^2
b) 116.16 mm^2
c) 11 347.43 cm^2
d) 19.2 m^2

Trigonometric Ratios

1. a) $\sin A = \frac{4}{5}$, $\cos A = \frac{3}{5}$, $\tan A = \frac{4}{3}$

b) $\sin A = \frac{5}{13}$, $\cos A = \frac{12}{13}$, $\tan A = \frac{5}{12}$

2. a) 0.8910 **b)** 0.3640
c) 0.4226 **d)** 0.8391
e) 0.9659 f) 0.0872

3. a) $\angle X = 47°$ **b)** $\angle Y = 75°$
c) $\angle Z = 75°$ **d)** $\angle A = 87°$

Volume

a) 52 500 cm^3
b) 85.184 mm^3
c) 90 053.75 cm^3
d) 5.07 m^3

Working With Powers

1. a) $3 \times 3 \times 3$

b) $\left(\frac{1}{4}\right)\left(\frac{1}{4}\right)\left(\frac{1}{4}\right)\left(\frac{1}{4}\right)$

c) $(-2)(-2)(-2)(-2)(-2)$

d) $\left(-\frac{3}{4}\right)\left(-\frac{3}{4}\right)\left(-\frac{3}{4}\right)\left(-\frac{3}{4}\right)\left(-\frac{3}{4}\right)$

2. a) 64 **b)** 7776
c) 0.0039 **d)** 0.0156
e) 0.0508 **f)** −676.5201