(e)

$$6^{x+1} = 40$$
$$\log 6^{x+1} = \log 40$$
$$(x+1)\log 6 = \log 40$$
$$x+1 = \frac{\log 40}{\log 6}$$
$$x+1 = 2.0588$$
$$x = 2.0588 - 1$$
$$x = 1.0588$$

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(f)

$$11.2^{2-x} = 0.6$$
$$\log 11.2^{2-x} = \log 0.6$$
$$(2-x)\log 11.2 = \log 0.6$$
$$2-x = \frac{\log 0.6}{\log 11.2}$$
$$2-x = -0.2114$$
$$2+0.2114 = x$$
$$x = 2.2114$$

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$$2-x = -0.2114$$
$$2+0.2114 = x$$
$$x = 2.2114$$

(g)

$2^x + 12 = 40$ rearrange to get 2^x as the subject

$$2^x = 40 - 12$$
$$2^x = 28$$
$$\log 2^x = \log 28$$
$$x\log 2 = \log 28$$
$$x = \frac{\log 28}{\log 2}$$
$$x = 4.8074$$

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(h)

$3\times 6^x - 10 = 12.5$ rearrange to make 6^x the subject

$$3\times 6^x = 12.5 + 10$$
$$3\times 6^x = 22.5$$
$$6^x = \frac{22.5}{3}$$
$$6^x = 7.5$$
$$\log 6^x = \log 7.5$$
$$x\log 6 = \log 7.5$$
$$x = \frac{\log 7.5}{\log 6}$$
$$x = 1.1245$$

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$$3\times 6^x = 22.5$$
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$$\ln 6^x = \ln 7.5$$
$$x\ln 6 = \ln 7.5$$
$$x = \frac{\ln 7.5}{\ln 6}$$
$$x = 1.1245$$

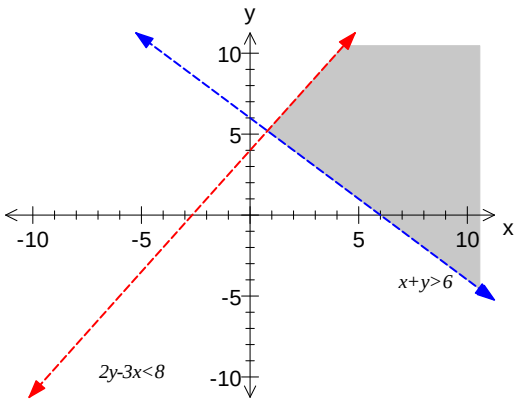
(i)

$$6^{x+4} = 6^{11}$$

as the bases are the same

the exponents can be equated

$$x + 4 = 11$$
$$x = 7$$


y
10
5
-10
-5
5
10
x
-5
-10
x+y>6
2y-3x<8